

Table 1A and B: illustrates data concerning the developmental competence of 59 different nuclear donor cell lines.

Table 1A: Incompetent cell lines.

Cell Line:	Pregnancy Initiation (%)	Full term calves	Number of ongoing pregnancies
BF101/65-c238-15	0	0	0
BF104/15-16	0	0	0
BF108-17	10	0	1
BF12n2-18	15.79	0	0
BF13n1-19	10.00	0	0
BF15-20	13.64	0	0
BF15-21	18.75	0	0
BF15-22	25.00	4	0
BF15-23	4.55	0	0
BF15-24	19.77	0	0
BF15-25	20.25	0	0
BF15-26	40.00	0	0
BF15-27	20.00	1	0
BF15-28	36.36	0	0
BF15-29	1.92	0	0
BF15-30	13.24	0	0
BF15-31	29.41	0	0
BF15n4-32	22.22	0	0
BF15n7-33	37.50	0	2
BF19-34	33.33	1	0
BF24/15-35	25.00	2	0
BF33/21-36	0.00	0	0
BF65-37	27.27	0	0
BF65-38	44.44	0	1
BF65-39	28.13	0	0
BF65c119-40	15.79	0	0
BF65c238-41	21.05	0	0
BF65c36-42	34.78	0	0
BFES-43	33.00	0	0
BF65c46-44	37.50	0	1
BF65c7-45	38.10	0	0
BF65c7-46	33.33	0	0
BF65c9-47	0.00	0	0
BF68-48	20.00	0	0
BF68n2-49	16.67	0	0
BF74c2-50	0.00	0	0
BF75-51	40.00	0	2
BF83/65c36-52	41.67	0	4
BF85c2-53	45.45	0	2
BF85c26-54	30.77	0	3
BF85c51-55	45.45	0	4
PGC-56	12.12	4	0
PGC-57	12.2	2	0
PGC-58	8.33	1	0

**Table 1B: Competent Cell Lines:**

Cell Line ID	Pregnancy initiation (%)	#Full term calves	# Ongoing pregnancies (> 90 days)
BF12n7-1	50.00	11	
BF15-2	54.55	4	
BF15-3	58.8	4	
BF15-4	61.54	5	
BF21-5	62.5	1	
BF22/15-6	64.29	3	
BF25-7	68.75	5	
BF83/65-8	50.00	-	2
BF84/65-9	68.42	-	7
BF85c102-10	76.92	-	2
BF85c19-11	50.00	-	2
BF90/68-12	60.00	-	5
BF91/65c42-1	58.33	-	1



Table 2.

>'000127a-001.scf' came from CONTIG 1 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-001.scf"(43>314)

AATTTGGCAGGAGACTCATTACGAAACCGGGCTGGAACCGCAGCTGTCGCGGATCTGAACGCGAGCT  
GTTCTGTGGGTGCGCAGCTACCTTGCTGCGGACAGCTGAGGGAAAAAGGAAGATGGGGTCTTTTGTCT  
TCATTTTTGAAACCTCGGAAAACTGTCACCATGCCCACTCCTACCCACCCTTTCTGTTGAGCAGAAA  
AAAGAGATGTTTCGACATTGCCCTGCGGGTTGTGGGGCCAAGCAAAGCATTCTGGCCGCAATGAAAA

>'000127a-002.scf' came from CONTIG 2 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-002.scf"(48>536)

CTCGAGGTGGACACCACCCTCAAGAGCCTGAGCCAGCAGATCGAGAACATCCGGAGCCCTGAAGGCA  
GCCGCAAGAACCCCGCCCGCACCTGCCGTGACCTCAAGATGTGCCACTCTGACTGGAAGAGCGGAGA  
ATACTGGATTGACCCCAACCAAGGCTGCAACCTGGATGCCATTAAGGTCTTCTGCAACATGGAAACCG  
GTGAGACCTGTGTATACCCCACTCAGCCCAGCGTGGCCCAAAAGAACTGTATATCAACAAGAACCCCG  
AAGGAAAAGAGCACGTCTGGGACGGCGAGAGCATGACCGGCGGATTCCAAGTCGAGTATTGCGGCAG  
AGGTCCGATCCTGCCGATGTGGCCATCCAGCTGACTTTTCTGCGCCTGATGTGCACCGAGGCCTCTCAA  
ATCATCACTTACACTGCAGTACACGTGGCCTACATGACCACAGACTGGCACTCAAGAGGCCCTGCTCT  
CAGGCTCACGAATNG

>'000127a-003.scf' came from CONTIG 3 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-003.scf"(55>553)

GCACGAGGCAACCTCACGCTGCGGGACTACAGCGGACAGGGAGTCGTGAAACTGGACGTCCAGCCGA  
AGTGCTTGGCCGTCGGCCCCGGGGGCTACACCGTGGTTCGTGTGCATTGGCCAGATCGTTCTGCTGAAG  
GACCAGAGGAAGTGCTTCAGCATCGACAACCCCGGCTATGAGCCCGAAGTAGTGGCCGTGCACCCCGG  
GTGGTGAGACAGTGGCCGTCGGGGCGCGGATGGAACGTCCGNCTCTACTCATCCTGGCACCACGCTGA  
AGACGAGGNCAGCTCTGGAGCCAAGGCCCGCGCCGACTGGCGTTTCCCACGACGCGCCTTCTGCTGGT  
GCGACCCACAAGTGTCACGTCTCACGTTGCGACGCTATCGAGACACGTTTTATGACACACAAGATGTT  
GCTGCCGTCTCGACACACATTGCTGGTGCTGAATATGGATGGTGACCTGAGACTAACAGTANATCAAT  
GCACGTCCATGACATGCTGTGAAAC

>'000127a-004.scf' came from CONTIG 4 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-004.scf"(48>649)

CCTCAGCTGCCCCACCAGCTCCTGGGGTCCACCCACCAGCACCAGTGGTCCACCCACCAGCCTCGGG  
GTGCATCCCCCTGCTCCTGGGGTTCATCCCCAGCTCCTGGGGTCCACCCCCAGCACCAGTGGTTTAC  
CCACCAGCATCTGGGGTCCACCCCCAGCTCCAGGGGTCCACCCCTCCAGCCCCAGGAGTCCACCCCTCC  
TGCTCCGGGAGTCCACCCCTCCAGCCCCAGGGGTCCATCCTCCCCCATCTGCTGGCGTTACCCCCAGAC  
ACCAGTGGTGCACCCACCAGCTCCTGCAGTTACCCCCNAGCTCGGGGGTGCACCCAACTCCTGCAGT  
TCACCCCCANGCTCCAGGGNTCCACCCACCAGCTCCGGNGTCCACCCACCAGCCCCCTGGNATCCACCC  
CAGCCTCTGGNGTCACCNNCTCTCTGNNGTCACTCCGCTCTGGGTCCATCCAGCACTGNGTGCACCC  
TCAATCTGGTGCATTCCACACCTGCCCGTGCTGAGCCCCATACCTCGAGCCTGGACTTCTCCCTCCCA  
CACTGAACACCCTACTCGTTGTTTGTGTTTGGTTGCCTAAAAATTTTGTGCTGGG

>'000127a-005.scf' came from CONTIG 5 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-005.scf"(53>543)

GCACGAGGGTCATCAAGGTGCAGTTGGCAGTCCAGGCCCTGCAGGCCCCAGAGGACCTGTTGGACCTA  
CGGGCCCCCTGGCAAGGACGGAGCAAGTGGACACCCTGGTCCCATTGGACCACCGGGGCCCGGAGGT  
AACAGAGGTGAAAGAGGATCTGAGGGTCCCCAGGCCACCCAGGACAACCAGGCCCTCCTGGACCTC  
CTGGTGGCCCTGGTCCATGTTGTGGTGCTGGCGNGTTGCTGCCATTGCTGGTGTGGAGCCGAAAAA  
GCTGGTGGGTTTGGCCCATATTATGGAGATGAACCGATAGATTTCAAATCACACCGATGAGATATGAC  
CTCACTCAATCANGTCATGGACAAATAGAAGTCTCATTAGTCTGATGGTTTCCGTATAACNTGCACG  
GACTGCAGGNACCTGAATCTGCCATCTGACTCAGATGGAGATATGNNGTGTATCTACCAAGNTGCAAA  
TGATGCTTTTAGTCTAT

>'000127a-006.scf' came from CONTIG 6 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-006.scf"(47>578)

000127a-001.scf



>'000127a-012.scf' came from CONTIG 11 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-012.scf"(48>603)

TTGCAAAGACACTAGGAAAACGGTCTTCTTTGCTAGGCTCTCAAGATGAGGCTTGCCGAACAGGTTCTGTTACTATTTTACCTTCACAGTTATCGTTAGTTCCATATGTTTGTCAAACACAGACCATTCTCGTTCCAGCTAGAAAAGCAATAGGTTAAATTTCTAAAAGCTGTTTGCTTTTTCGCTCTCGCCTTTAAATCCTTGGAAGTTATCTCTTCTGCTCCCCTACAGTATATATGGTTGGGAAACTGTGAAAGGAAGAAGNGTGGTCTGTNAGGGAACCTCCATCCATGGGGCTNCTAGAGCGGGTGTNGTGTTCCTACACCACTCCCCCTCTCA

>'000127a-013.scf' came from CONTIG 12 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-013.scf"(52>585)

GCACGAGGCATGACTGACAATGATCTTATCAATATTCTTGACCCTTTTTATCATCTTTCAACTAAAAGTTTCAAAAACACAACTTTTATCACAATCCAGAACTGACACCAACAAAAATATTAACAAACACCCCTTGAGAAACAAAATGAACGAAAATTTATTTACCTCTTTTATTACCCCTGTTATTTTAGGTCTCCCTCTTCGTACCCTTATCGTACTATTCCCAAGCCTACTATTCCCAACATCAAACCGACTAGTAAGCAATCGCTTTGNTACCCTCCACAATGAATACTTCAACTTGTATCAAAAACAAAATGAGTATCCACAATTCTAAAGGACAACATGAACATTATATTATTTCTGATNCTATTTTTTGATCATCAATCTACTAGCCTATACCCATTCTTTCCACCACACACTATCATACTAGCTACCCTCCCTGTGGCGNAGCGGATCAGATCGCATATATAGCTACTGCCTTTTACCAGACACCCTCCTATCATCTNATTTGATTTACTTTTTTCTN

>'000127a-015.scf' came from CONTIG 13 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-015.scf"(48>658)

AATAAAAAATACTATGACTAAAATTACTGTGGTTGAGAAAATTTGGGTAATTTATAGTACCAGTGTTCAGAAATCTTCTTAACCTTGTATTTGGTAACCCAAGTAAACAATTTTCAGCTAATCTCAGATGGATTATTTTACTTATGAAATTTCTCTGTTCACTTTCTCTTTATCCTGCTTCACAGCTTTTGGGTGTTGCCACATGATAAAGTATCATATCAACTCTAGATGATTAGGCAGAAANATTTTATCAAAGTCAAGNGTTACTTTTTAGCAA

>'000127a-016.scf' came from CONTIG 14 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-016.scf"(52>645)

GCACGAGGGTACAGAGGCCGGCTCCCGGAGCCAGCTGAGTTGCGGCCTCTACGACATGTCGGCGCACGAGAGGGCACGGAGCTCGACCTTAGCTGGATCTCCAAAATACAAGTGAATAAACCAGCAGTGCTAAGACGTGCAGAACAAATCCAGGCTCGTAGACCTGTGAAAAAGGAGTGGCAGGCTGCATGGCTCCTGAAGGCTGTTACCTGTATAGATCTTACTACACTNTCAGGTGATGACACAGCTTCCAACATTCAAAGGCTGTGTTATAAAGCCAAGTATCCAATCCGGGAAGACCTCTTAAAGCTNTAAATATGCATGATAAAGGCATCTACAGCTGCCGNTTGTGGTTATCCTGCCCGCGNGNGATGCAGTGAGAGCTCTAAGGCTGCGGCTGTGACATCCCATGGCATCAGGGGCCCTGGCTTCCGCTGCACAGACTCATTGATACAGATTAGAGAATATGATGGNCGGGNAGAGGGCTACGGAATGAGGGNGGATAACAGACTGGGCTGCAGCCAGGAAGCCGNTGAGAGACGCAGTGCAGGCGGGGAGCATCCAACATCTACCAGAATGATCTCCAN

>'000127a-017.scf' came from CONTIG 15 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-017.scf"(52>584)

GCACGAGGAAATTATTTACTAAACTAAACCTTAGGAAAAGATGTTTTGCATCAGTCTTAATAGGCAAAAGTTTCATGCTTAGTGACTGGAGAGATTTTGTCTATAGCTTTTCCCTCTATAAATACTATCTAGAATGAAAGCTAATTTAGGAACAAGACTAACATTCAAAAAACCTTAGTGATATATTTTAATTATTATTAGCTCATTATTAGATCATTTATTNTCATCTGTATTTGCCATTAAAATTTATTTGCCTTTATATCTTTAGAATATGAGTTTGTGTCTTTCTGTTTATCATTTGCTACAAGTTTTATAAAAAGAACCTTCACTAGTACATGCCAGAAGATCATATTTCTGCTAAGTATTATTNTTTTTTAAATCAGATGTCGCTGTATTATTGGTCATGCAGCG

AGTAGAGGAAATGTACAGACAGAGTTTTCTTTAGCCATGACCTTTCTCTCTGNAGNTGNTGCTTTAAGC  
AGATTTCTCTTATATATGNCTTCTTTCTCTACTCTTAGATACTTGCTGT

>'000127a-018.scf' came from CONTIG 16 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-018.scf"(44>670)

GAGCCCACCTGGAGCTGCGCGCAGGCTTGTAGCGCGGAGCCAGCGCAGAACCTCGCCCGCGCAGTC  
CCTCGCGCGCCCCGCGTCTCGGCGCTGATTTCCAGGCCCGGAGCCGCGCCAAGCGCTGCGAGCGGAC  
CCGGGAAGAGCTCCGGCCCCCGCCGCCACCGCTTCAACGGCTTGGCTCCCTCCGCCCCCGGGGGTTCG  
CGCACCCACGATGCTGCAGGGCCCCGGCTCCCTGCTGCTGATCGTCCTCGCCTCGCACTGCTGCTTGGG  
CTCGGCGCGCGGGCTCTTCTTCGCCAGTCCGACTTCCCCTACAAACGCAGCAACTGCAAGCCCATCCC  
GGCCAACTGCAGCTGTGCCACGGCATANAATATCAAAACATGCGGCTGCCNACCTGCTGGGNCACG  
AGTACATGAGGNAGGTGCTAGAGCAGGCGGCGCCTGGATCCGCTGGTCTGAAGCATGCCACCGGACA  
CCAGAAGTTCTGTGCTGCTCTTCGGCCGTCTGGCTCGACGACTGGAGAAACATCAGCCGGCACTGCTC  
TGGTGCAGTGAGACCTGGCTCATCATGTGCCTTGCTTCGTGGNCGATGCTGATGTACGCTCCAGAAC  
ACACTTGCTCCCTCT

>'000127a-019.scf' came from CONTIG 17 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-019.scf"(51>444)

GCACGAGGAAGATGGCCTCGGGCCCCACGAGCATCCGCGTGCACTTCCAAGCCGGCCGCTTCCACCTG  
GACGGCAGCCGCGAGAGCTTCGACTGCCTCTTCGAGCTGCTGGAGCACTACGTGGCGGCGCCGCGCCG  
CATGCTGGGGGCCCCGCTGCGCCAGCGCCGCGTGCGGCCGCTGCAGGAGCTGTGCCGCCAGCGCATCG  
TGGCCACCGTGGGCGCGAGAAACCTGCGCGCATCCCCCTCAACCCCGTCTCCGCGACTACCTGAGC  
TCCTTCCCCTCCANATCTGACCAGCCGCACACCGCAACATTACTGNAGCGCCCTCTACTATTTTCTATA  
TTATTATTATTTNCTGACATGTGGNTGCCTTCCCATCTGGTGTAGGTACGG

>'000127a-020.scf' came from CONTIG 18 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-020.scf"(41>577)

CTCGTATTTGATGGACTCTAACTACATCGATCCGAAATTTCTCCATGCGAAGAATATTTCGAAAATAG  
CTACATCCCTGAACACAGTCCGGAATATTACGGCCGGACCAGGGAATCGGGATTCCAGCATCACCACC  
AGGAGCTGTACCCACCACCGCCTCCGCGCCCTATCTACCCTGAGCGCCAGTATAGCTGCACCAGTCTC  
CAGGGGCGGGCAATTTCGCGAGGCCACGGGCGCGCCAGGCGGGCCACCACCACCCCGAGAAATCAC  
AGCCGCTCTGCGAGCCGGCGCCTCTCTCAAGCGCCTCCGCTCCCCGTCAGCCCCGCCAGCCTGCA  
GCCAGCCAGCCCCTGACCATCCCTCCAGCGCCGCCAGCAAGCATCCATAGTCTACCATGGGATGAAAA  
AATCCACGTTGCACGGTGTACCCCATTTACGTTAGGGGAACCNACGCTCGAGACGCCTAACCGCAGCA  
GTCTGTATTAAGAAGAGATTATTACATCGTACTGACGAGAGAGAGGAGATGGCCATGTGG

>'000127a-021.scf' came from CONTIG 19 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-021.scf"(38>612)

CTGCAGTTGGCCCCTACTGGCCGGGGTGGTCTGGGGAGTGGACAGATTGAGATTGTGTTGGCAAGTGT  
TTGTCTTTTCTGAATGCAATGTGGCAAAGCAGGAAAAGAGCCTAGGTTTGAGAATATATGTGCGTGC  
ATGCTGAGTTGCTTCAGTTGTGTGACCCACGGACTGCAGCCACCAGCCCCCTCTGTCCATGGAATTC  
TACAGGCAGGAATACTGGAGTGGGTTGCCCTGCCCTCCTCCAGGGATTTCCTGACCCAGGATCAAATT  
CACGTCTCTTACATCTCCTGCACTGGCAAGACAGTTCTTTACCACTGTCCCCACCTGGAAGCNAATATA  
CACANGATGACAAAGCTCAAACCTATTCTGACCCACACCTCTGTCTGTTCTAGTCCCACACGAGCTTG  
CTCTTTCTACTGNGNGNCCACTAAACGACTGTTCTNCTGTGCGCTTACTCACAGTATGGNNCTATCANA  
GTCACTGTTGCTTTGATGCTAGTCACATAACCTGGACTTCTACCTTTTATGTTTGTGTTTTTATAAAAAAC  
TAACTGATTTTTTTTTTTTTTTTATC

>'000127a-065.scf' came from CONTIG 19 at offset 537;"E:\SEQUENCE\export\EST\_db\000127a\000127a-065.scf"(46>576)

TTTTTTAACTTTTTTTTTTTTTTTTACTGGCATTTTTGTCTCTGATTCTCTTCAGCCCTCACCCCTGGCCT  
TCATCTGTCTTGATTGACATCTTTGCTTTCTTCTGTCCCTTCACTCCAGATCCCTAAGTTCCCTTCCAGC  
TTGGGGACTCAGGGTGGGATGTGGTGTGGAGGAGAAGCCCCAGGCCCAAAATTCCATCTATTCTTCCT  
GGATCCCAGAGGGTGGGGTAGAGAAGAGGGGGGNCATCCCCAGCCCCCAGCACTGAGGAAGAATG  
GGGCTCTTAAGGCCTTAGCTCTGATCCCTTCCCCCTTCTCCCTGCCCCCAGNACTGNGCCACTTCTGAG  
TTGGGCAGCGGGTCTAGCTCAGCTCAGCTGAGAATGTTAGAACTACAACATAATTCTATTAATTAG

TTTTGTGTCTTCAAAAAAAAAAAAAAAAAAAAAAAAAAACTGAGGGGGCCCCGTACCCATCGCCTATG  
GATCGTATACATTCCGGCGNCGTTACAGCCGGACTGAAAACCTGNCGTACC

>'000127a-022.scf' came from CONTIG 20 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
022.scf"(48>664)

TTCTCCTTTGCCTGGCCGGGAGGGCCTTGGCAGCCCCCTCAACAGGAAGCCTTGCCTGATGAGACAGAA  
GTGGTGGAAGAAACCGTGGCCGAGGTGGCCGAGGTACCCGTGGGAGCCAACCCCGTCCAGGTGGAAG  
TAGGAGAATTGATGATGGTGCTGAGGAAACCGAAGAGGAGGTGGTGGCCGAGAACCCCTGCCAGAA  
CCACCACTGCAAACACGGCAAGGTGTGCGAACTGGACGAGAAACAACACCCCCATGTGTGTGTGCCAG  
GACCCCAACAGCTGCCCTGCCCCATCGGCGAGTTTGAGAAGGTGTGCAGCAACGACAACAAGACCTT  
CGACTCTTTCTGCCACTTCTTTGCCACCAAGTGCACACTGGAGGGCACCATGAAGGGGCACATACTCCT  
ACTGGACTACATCGGGCCTTTGCAATACATCCNCCTGCCTGGACTCGANTGATGTATTCCCTTGGCAT  
GCGGATGGCTAGTACGTCTGTGACGTGTACGAAGGAGAGGACACACTCTGACGATACAGAGCTGGAG  
AAAGATCACGAATGAACGCCGGGCGGGACATCTGGATGCGNCGGATNGAAAATAACAGACTTTCTGC  
CGGAACGG

>'000127a-023.scf' came from CONTIG 21 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
023.scf"(45>583)

CTGGGGGGAAGACCATGGACTTCGTGACGTGAATGAGAGCAAACGCACGCTGGGTGCAGGACTTCCG  
CCTCAAAGCTTACGCCAGCCCCGCCAAGCTGGAGTCCATTGACGGTGCCCGCTACCACGCCCTGCTGA  
TCCCCAGCTGTCCCGGGGGCCCTGGTGGACCTGGCCAGCAGCGGGTCCCTGGCTCGCATCTTGCAGCAC  
TTCCACTCTGAGAGCAAACCATCTGCGCTGTGGGCCACGGCGTGGCCGCCCTCTGCTGCGCCACTAG  
TGAGGACAGGGTCTGGGTGTTCGAAGGCTACAGCGTCAACGGGGCCCTCAGTGTACGAGCTCGTGCGGG  
CGCCCGGTTTCGCCCACCTGCCCCNTGATGTGGAGACTTCGTGTAGGACGCGGGGNCCTGCTTCAGCG  
CCAGCGACCTGACGCATGCATGTGTGCTGGATCGCCACCTGGTCACGGNCAGACGCCAGCTCACATTC  
TGNCGTGCAAANCTGTCTTNCCTTGTGCAGCGNAAGGAGNAGNCCNNGCAGCCCCGACAATGCA

>'000127a-024.scf' came from CONTIG 22 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
024.scf"(54>633)

GCACGAGGGAGGTACCCACATCCCTTCAAGATGAAAGCCGGGTGCTGACCTTGGCTGTGCTCTTCTT  
GACGGGGAGCCAGGCTCGGCATTTCTGGCAGCAAGATGACCCCCAGTCATCCTGGGATCGGGTGAAG  
GATTTTGGCCACCGTGTATGTGGAAGCAATCAAGGATAGTGGCAGAGACTATGTGGCCCAATTCGAAGC  
CTCCGCTTTGGGAAAACAGCTCAACCTGAAACTCCTGGACAACCTGNGACACCCTGGCCAGCACGTTGT  
CCAAAGTGCGTGAACAGCTNGGCCCAGTGACCCAGAGNNTCTGGACAACCTGNAAAAAGAGACCGC  
GTCGCTGAAGCAGGAGATGCACAAGGACCTGAGGAGGTGAGCAGAAGTGCAGCCCTACTGTACGAGT  
TCAAAAGAGGGCAGAGGAGTGGAGACTACGNCAGAGTGGCGCGCTGCGNNAGAGTCGGAGGGCGCG  
CAAAGTGAGAGTGAGACAGTGACCGTGCCAGACTCGCACGCGCCGCCGAACTGGCAGAGTGCGC  
TACGACACTGCAGGTGCGCCGCGGGGCTAAGGGGGGGCGGGA

>'000127a-025.scf' came from CONTIG 23 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
025.scf"(47>576)

TTTTTTTTTCCAGTTGGATAAATCATGAGATTTATTTATATTTCACTTTAAAAGCCACAACATAACAAA  
CGTCACTTTCTGGAGAGTCATCTTATTATAAATACATCAAGTGCACTTAATACAATGAAACTCGTCTTT  
TGGTACCAGTGTGAGACCATCAGGTGAGGCTTTGTTAAATTTCCCTCTAAACTTAGGCTGAGATGATCT  
CAATTCAGGAGGGTCATAGCAAACCTTTTCCAAAACCTACAGCGAAGAAGCTGTAAACAACACCCGCGCC  
CTCCCAATGACAACGCNGTAGAGAAAGTTACTTTGCCCCACTNACCCGGGCCCTACCCGCTCTGGCAC  
GTGAGATTACGACGAGGAGACGAGCGCCACAGCGTGTGCAGGCCAGACCCGGTCACTGTACTCAGN  
CCTGACCACAAATATCCTATCAACGAAGTCTAAGGTAAAGAACTAACAGGGGCTCTGTCTACAAGCTT  
GCTCTCAATGAAACCCGNCTTTATAACTGGTACAAGGACTCACTTGGTGT

>'000127a-028.scf' came from CONTIG 24 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
028.scf"(53>645)

GCACGAGGGGAGGTTGGACGCTGTGCACCCTCCTCCCTCCTCTCGCCGGCAACGTCTGAATCCGGAC  
ACCATGGACTCGGTTGCCCCCTCTGGCTGATGCTTCTGTGCTGCTCCTCGTGGGAAGTGCAGTGGGT  
GATGCCTCGCAGGCGCCGCCAGGAAATAACGCGGAGATCTGCCTCCTGCCCCGGACGACGGGGCCCTG  
CCGGGCGCGGATCCCCAGTTACTACTACGACAGGTACACGCAGAGCTGCCGCGAGTTCATGTACGGAG



CCCTNCGACGCAAGTGGCAAAGTAGCTGACCCTAAGCTGATGAATTGATTCTACGAGCCTCATGGNAG  
ANCTGTGACATCCCAACAGCCCACAGCGAAGAAACGCAGCTCGTNAGCACCAGAAACAACCTGAGAGT  
GAGCTGAATTGATGT

5 >'000127a-034.scf' came from CONTIG 30 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
034.scf"(47>553)  
CTGCTTGGCAGTTTGATTTTAAATTGTGTTAGAACATAAGCTGTTTCAGAAAAATATGAAAAATGTAT  
GGCTGCCCTTTTGAATATTTGATGCCTTGCTACAGGATACTGCAAAGAACATGGCTGTCCTAAAATT  
GTAAAAATTGTATAACAAGTCACAAATGCCAGTTTTCTAAAACTTTTCAGATTTTCCCTTGATATG  
10 AAGGTAAGGAACATATACAGGTATGGAGTATTTGACTGAAAACAGTGTAAGTTATGGTGGAGACACA  
GACACAGAATTTTCAGAGATTTGCTAGTGGTAGGTACTGAANTGAATACCCNNAGTAGCTGTAATGTC  
CCCTGAGACAGGTAGTCTTTTATACTAACACAGAGACTTTGTTGGNTCATTATAACACATGCGATGTN  
GTAAATGTGNTCAGGGAGAAGNTAGGAAGTTGNATGATTTGGACAAGAGTTGAAAGGATATCATAGN  
TAGAGGAGGNTGAAANTACTGNAAGTTGNT

15 >'000127a-035.scf' came from CONTIG 31 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
035.scf"(48>603)  
CAGGTGGCACAGCCCGCCATCACCGACAACAAGGATGGCACTGTGACTGTGCGCTACGCCCCCAGTGA  
AGCCGGCCTGCACGAGATGGATATCCGCTATGACAACATGCACATCCCAGGCAGCCCCCTACAGTTCT  
20 ACGTGGATTATGTCAACTGTGGCCATGTACAGCCTATGGGCCAGGCCTCACCCATGGGGTGGTGAAT  
AAGCCCGCTATCTTCACCGTCAACACCAAGGATGCGGGCGAGGGGGGCTTGTCCCTGGCCATTGNAGG  
CCCCTNCAAGCAGAGATCAGCTGCACCGACAACCANGATGNGACGNGCAGNNGTCTCCTACTNGCCG  
TGTTACCTGGNGACTACACATCCTGGNCAAGTACAACGACAGCATANCCGGGCAGCCCTTCACTGNCA  
GGTCACAGNTGACGACTCCTGCGCATGTCCACTGAAGTGGGCTTGNCGNCGACTCCCATCACATCCGN  
25 AGACGACTCACCTCTGACGCAAAGGNGCCCCCTCGGCGGNAAANCTGCTGTGNANCGGTGGCAGNCA  
CAGGGATCTATCTC

>'000127a-036.scf' came from CONTIG 32 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
036.scf"(48>605)  
30 CAAAATCCTCACCTGCAAATGAGAATGCTGGGTGGGCACAGAAGCACGTGAGAGAAGGCAGGNGTG  
CGGAAGCCCACCTGGGGGCTGGGCTCCCCAGTCTGCGCACCTTCAGGCTGCTTAACTCAAGCTTGAGT  
TTGTGGACCTGCTCAGTCTGCTCGACCACAACCTTTCATAGGTGATTGCTAAGAGGGTTTTTCTTAAA  
AAGAAAAAAGAAATATTGTCAAAAATGGTTGTTTGACACCCTGTGAATTTTCTTCTTCC  
AAATGGAGACTCATGTTTATGACTACTATTTAAAAAGACTCCATTTAAAGCACANTTTATGAAAACAA  
35 ATAANTCCATGTTTAAATGTATGTATACTTAATATCTTCTCTACAGTAGCTCAGTTATAGAGTGTTTTT  
ATTACAATTATGTTTTGTCGGAGGAAACCGCCCAGAGAGNGATCGGGACAGGAGAGNTATGTTTGTTC  
TAATTATTGAGTGGGCTTATACTTCGCTGGGTTCATGTTCTTGGTGACTACAATAATCTTCAACTAAA  
AAATCATTAAG

40 >'000127a-037.scf' came from CONTIG 33 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
037.scf"(46>513)  
CTGACGCTGAGCAGCGTGGTGAGATGGCTGTTAAGGATGCTCATGCCAAGCTGGCCGAGCTGGAGGCC  
GCTCTGAGGAACGCCAAGCAGGACATGGCGCGGCAGCTGCGCGAGTACCAGGAGCTCATGAATGTGA  
AGCTGGCCCTGGGACGTGGAGATTGCCACCTACAGGAAGCTGCTGGAGGGCGAGGAGAGCCGGCTGG  
45 AGTCTGGGATGCAGAACATGAGTATCCACACCAAGACCACAGAGGCTACGCAGGTGGACTGACTTC  
GTCCTACGGGACCCCTGGCTTCAACTACAGCCTGAGCCCCGGCTCCTTCAGCCCACCAGATCCAAGCC  
TGTGGGTGTGAAGAAGAATGAGACCCGCGATAGGAAGACTGGGGTCGTGTTCTCTGATGTGCTGTGCT  
AGTGTATGGGCTCTGCGGNGCCTTCCATCCTCTTCGCTTCATGCTTCTTGCGAGNAGCTGGCG

50 >'000127a-038.scf' came from CONTIG 34 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
038.scf"(1>498)  
AGGGCGTTAATAGTCCGCAGATTGCAGTCAAACACCCGCTCACGACCGACCCCTGTCTCCGCTCGCGCC  
CATCTACACAAGGCCCGTGGAACAAGTTTCGAGGCTGGGGGTCCCCCTCCTGAAGGACAACGTCT  
CCTACACGGGCAGGCCTTTGGTGCTGTATCACTGACTGAGAGCAGAGCCTCCTGAGAGCCTGAGCTCG  
55 TCCTGCACTCCCACCCCATCCCNACCAGGCGGCCCGGCTCCTCCAGTGCAGATGGCACAGGGGGTGGA  
CAGCTCTCCTCCAGTGCCCCGGGACCTGCACCCACCACGNNGCTGGAGCTGGGGCAGATGGNGACAGC



GACCCTGCGCACTGCAGGGATCTACGACTGTNCTGGGCTCAGGCTGGGCACTGGCCTTTGTNCAAGNA  
TATTATAATCAGCTGTGCTCCCCAAAAAAAAAAAAAAAAAATAAAAAAAAAAAAAAAAAAAAAAAAAATGAGG  
GGGCCGTACCCATCCCTAAGGTGTA

5 >'000127a-039.scf' came from CONTIG 35 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-039.scf"(54>514)

GCACGAGGGAAACAGTGAATAAGCTCTGCTGTGTGCTGGAGCTCAGGAGTTTTGCCAAAACAATCTG  
GGCCTACATAAGATTTGGAAATTATCTGTCTATGGTGAGACCTGAAAGGAGTGATTTAGACAAGAAAC  
AATGTTCCATTACGAATATTCCCAAAAGGAACTTCACCCCTTCAAATGGTATATGGAACTGTTGCT  
10 ATTTTCCTAAAATTTTAAAAATTTTCTAAATGACTGAGTGCTAAATACTGTTACTCAAGTTTAAATGC  
CACCCTCAAGGAAAGAGAACTATNGAAGAAATAATTATTTAATATANTTGCAGTTGGGGGAGAAG  
AAATAATACATTTAGNGTATTAATTCATATGCTAGGAAGTGCATCTAGAATTTATGGGATGTTGATGG  
NAGAGTTGTGCTGGTACTGAAGATACAACTTTNTTTGTTTTATTTGGNGTA

15 >'000127a-040.scf' came from CONTIG 36 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-040.scf"(53>617)

GCACGAGGACGGCAGTCGCTAGCCCCCTACCCACCTCCATCCTGACTCCTGACCTGTAGGTTGGGCACC  
ACCATCAGAGCCACCTCCAGTGCTGACCCCTCCCCCTCAGCAGCCCTGTAACAAGTGCCTTGTAAGAA  
AAGCGGGGGAAGTGGGAGCAGCCACGTTAGTCTCTGGAGGTAGGTTATCCCTGGGAGACTTGAAGGC  
20 TGGGTTTGATTAAGAAAACCTCTTCCACCCCCCACTACTTCCGGACTAAGGAATTAGGGGAGCATC  
CGTTCAGAAGCCTGAGAAGTTATCCTATGCTGATGGAGGAGCCATGCTGCTTCATCCTGCGTGAATGC  
AGNTGGCTCTCCTTGCTGCTGNGATCACCCACAGCAGACCCATAGCCCCCAGCCTGGTGCTGGCTGCTC  
CAGCCCACCATGGTACATGGCTCCCCATACATAGCTCATTCCCANCATGNNAGAAGCCNAGTGCNAG  
NTCTGNGTATGTNATCACCAGCCTTGNCTGCTTCGGGCTCACAGCACGGAGGAACACCCGCTTCTCCA  
25 CCTACTTGTTGATCTAAAAGA

>'000127a-041.scf' came from CONTIG 37 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-041.scf"(52>584)

GCACGAGGGCAGCAGCTGGGGGCCGGCAGTTGCCCTGGGGACCGCGGGCCCCCTCCCTCCTCTCTCCC  
30 CTGCCCCCTCGCGTACCCACCGAGGCGCGGCCGACTCCCCGGCCTCCCTGCCGCCGGCTCGGCGGAGC  
CGCAGCGGCGCCCCGCGAGAGGCGGAGCCGCTCCCAAGATGTGCGCAGACGGCCATGTCCGAGACCTA  
CGATTTTTTGTTTAAATTCTTGTTATTGGAAATGCAGGAACTGGCAAGTCTTGCTTGCTTCATCAGTTT  
ATTGAAAAAAAAAATCANAGATGACTCANATCATAAATAGGAGTGGAATNTGGTTCAAAGATATAAA  
TGNTGGNGGTNAATATGTAAAGNTACAGATATGGGACACAGCAGGCCAGAACGATTACAGGTCTGTGA  
35 CAAGAGCTACTACGAGTGCAGCGGGGCTGCTGTCTACACATTACCAGCGAAAACATACATGCGCTACT  
AATGNTTACAGATGCCGATGCTGCGAGCCAAACACGNCTCATCCCTGCGGAACACAAG

>'000127a-042.scf' came from CONTIG 38 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-042.scf"(48>516)

TTTGAGAAACCTCTGCGCCATGAGAGCGAAGTGGAGGAAGAAGCGAATGCGCAGGCTGAAGCGCAAA  
AGAAGAAAGATGAGGCAGAGGTCCAAGTAACTTGTACCCCATGGAAGCCACAGAAGCAGAAACA  
AGGGAAGCCAGAGGCCAGGGACGCTGGTACAAAGTGTGGACTGCATGCCTACTATCTAGAACTTATC  
AATGGATCTGGAACATCTATGGCCATTCTGATCACCTTGACCACCTTTGCGAGACCTACCTTGCTCATA  
TCAAAGCCGTCCTTTTGGTCCATTGCCCTGGACCTGTGATAACTATGGACTAGTTCTCTCAGTTGT  
45 GGCTGAATGTAAACGNGTACAATAAATCATCTNCTTTGCTGTCTTATCGGAAGAAAAAAAAAAAAAAAAA  
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAACTGAGGGGGCCGGNACCNATCGNCCTATG

>'000127a-043.scf' came from CONTIG 39 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-043.scf"(52>491)

GCACGAGGCCCCACTCTCCCCCGCCCCGCTCTTTTTTAAACATGTGATTTGTGTATTGGCCTGAGCTGA  
GCCTTCATCGCAGTGTGTGGGCTTGCTCTAATTGCAGCTCTCAGTCTTCTCTTGTTGGAGCACGGGCTCC  
GGAGCGCATGGACTCAGTAGTTGCAGCTCGAACTCTTGTTGTACAAAGCTGGCTTAATTACCATGTG  
CCATGTGGAATGTTAGCTCCCCACCACGGGTCTAACCCGCGCCTGCGTTGGAAGGCAGATTCTTAACC  
ATTTGGCCACCATCGCAATATCANGGCCTGCCTCTGCTAACCACACTCCATACATCCCTTCTNCTCCG  
55 CTCCNNCCTGCACGTATCTGTCTCTTGCTGCTGGATGCTGTTTCTAGTAGTTTCGTTTGGCCTGTGTTTTCC  
ATCTCTTATGTTGTTGTTTGTCTCNNTC



>'000127a-044.scf' came from CONTIG 40 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-044.scf"(50>491)

5 GCACGAGGAGGCCTCGCTCTTTCTCGCGAACAAGCATCATGAGCTTCAACACCCAATCCACCTTCTCC  
AACTACCGGTCCCTGGGCTCCGTGCAGTCGTGGGCCACCGGTCCGACCGGTGAGCAGCGCGGCCAG  
CGTCTATGCAGGCGCCGGGGCTCGGGCTCCCGGATCTCCGTGTCCCGCACACCAGCGTCCGAGCG  
GCTGTGGGGTACGGGAACCTGCGCGCCGAGATGGCCGAAGGTCTGGTGGGTGTAGAGGGCATCCATG  
ACGAAAAGGAGAACCATGCAAACTGAAATGACCGCTGTCTCTACTAGAGAAGANNAGAGCTGCAT  
10 GCGATATCGCAACTGCAGACAAATCCGGTACACTGTAGAGATGTACTCAGTCATTAATGGCGCATACT  
GTATATATTTAGTCTGGGCTAATTTGATTTTTTGT

>'000127a-088.scf' came from CONTIG 40 at offset 24;"E:\SEQUENCE\export\EST\_db\000127a\000127a-088.scf"(50>618)

15 TCGCGAACAAGCATCATGAGCTTCAGCACCCAATCCACCTTCTCCAACCTACCGGTCCCTGGGCTCCGTG  
CAGTCGTGGGCCACCGGTCCGACCGGTGAGCAGCGCGGCCAGCGTCTATGCAGGCGCCGGGGGCT  
CGGGCTCCCGGATCTCCGTGTCCCGCACACCAGCGTCCGGGGCGGCTGGGGGTCCGGGAACCTGGGC  
GCCGGGATGGCCGGGGGTCTGGTGGGTGTAGGGGGCATCCAGGGCGAGAAGGAGACCATGCAAGACC  
TGAATGACCGCCTGGCCTCTACCTGGAGAANGTNGAGAGCCTGGAGGCGGATAACCGNAGACTGGA  
GAGCAAAATCCGGGAACACCTGGAGAAGAAGAACCCAGTCAGAGACTGGGCGCATTACTGTAGATC  
20 ATCGAGGACTGAGGCTCATATTTTGCATTCTGGGACACGCCGCATCGTCTGCAGATGATATGNCCGT  
CTGCTGCTNTGACTCAGAGTCAGTATGAAAGACTGCCTGCGCAGCTGGGAGAGGACTACCGGCTCGCA  
GTCATGTGACACATGTCACGCTGCGTGA

>'000127a-045.scf' came from CONTIG 41 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-045.scf"(52>359)

25 GCACGAGGCAATCTTTGCCATCCTAGCCGAGAGGGTATCAAGTCGACATCTGCAGGAGTCAGACACG  
CTCGGGGCTACTGAGAAGCCTCCCAGACGCTTCATTTCTCTCTTGGGTTTACGGTAGGGCACGAAG  
AGGGTGAGCTGAAAGGTTGTAGAAGCTCCAGTTGCTCGCCACCCTCCTGGACTGNAGAAACAGGNCCC  
TTCCAGGGATTCTGAGCGGACTAGTGGAGCCGAGGNACTAAAGCGGCGGCGCGCTCCGNAATCC  
30 CNNATCTGGGTCCANAATACACANCTANATNNGCTT

>'000127a-046.scf' came from CONTIG 42 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-046.scf"(48>562)

35 CGGCGGCGATTGTGGTGACTGAGCGGAGCCCAGCGACAGGATGGCTGGGCACAGATTGGTGTGGTA  
TTAGGAGACCTGCACATCCCACATCGGCGCAACAGTTTGCCAGCTAAGTTCAAAAAGCTGCTGGTGCC  
AGGGAAGATTGAGCACATTCTGCACTGGAAACCTTTGCACCAAGAGAGTTATGACTATCTCAAGA  
CTCTGGCTGGCGATGTCCATATTGTGAGAGGAGACTTCGATGAGAATCTGAATTATCCAGAGCAGAAA  
GNTGTGACTGTTGGGCCAGTCANAATGCTCTGATCCATGGACATCAGTTATTCATGGNGAGATATGCC  
CAGCTAGCCCTATTGCAAGCAGTNGATGGGACATTCTTATTCAGACATAACCATAATTTGTAGCATTGGC  
40 TGNAATTATCTCTTATTCGTTCTGCCCTGAGCTATATGTCTTGGNNACACATATTCTCTTTGGTGAGT  
ATTCAGCTTACGTGTCTTTGTGTTATATGGAGAGAAA

>'000127a-048.scf' came from CONTIG 43 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-048.scf"(54>584)

45 GCACGAGGGTTGATAAGGCATCTACGTTTTAGAAGCTCTGGCCACTAGTCGTTAAGATGATGGCTCTG  
ATGGCATTCTATGGATTATAACGAGTCATCTGTGAGAGAGAGTCACTCTGGACAGGCTTGTTACCCTG  
ACTGACCCAGAGGTCCTGGGGGGAATGGCACCTTGTCCTCGCTCTTAAGAGAACCCTGTGGAAGGAAAC  
ACAGAGTAAACGTGGCTGCCGTTTCAAACTGTGGAAGGAAATGTGTGAGCGAATGAAGGATCTTAG  
AATTCAAAGTAGAGGGAAGCCACCTTGCTACTGATTTTGATGTATATTCACAGCGTCCTTTTAAGAT  
50 CTGNGAATGAGACTCTTCTAANCTCTATACTCTTGCACTCTAACGCAGATCACAGTCTTATATACTAT  
TTATCNANNNAAGTATCATTCTAAGATGTTNTTTNGGAAAAGTGTAGAATGTAATGTACTATGAACTG  
ATATCTGTCAAGTATTTATATAATACTGTTTANTTTACTGTTTTGGTGATCTA

>'000127a-049.scf' came from CONTIG 44 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-049.scf"(53>599)

55

GCACGAGGGCACAACACTGAGAAAAGCTAGGGAAGACTCAGGCTCAGAGCATGGTTCCTGTGTCCAGG  
 ATAGTCACAGTATTGTTCAAATAAAGAAGCTTCCTGGCAAGTCAGTCTTTTAACTAGTATCCTATGT  
 ATCCTTCGTTGATTTTCAACACTTCTGAAGTCTCCCTCTATTAGTCTTCTCCCAAGGGACATTTATGAG  
 AAGACTCCTGGAGAAAAATCTGTTTAAAATATGTGCTCTGTTTGCTGTGAATTCAGCTGCTGTGACTT  
 5 GATCACTTACACAGGATGTCAGTTCTCCCTTCTTCTGTAGCAATCTANAGGGTTGGNACAGNAAATGG  
 AATAAGGGCAGATGAAAGGCACTTCAGAGATGGAGCATCTTTAAGGTATTTACATACCATTATTGGGA  
 CACTATCAGCAGGTGGGGCTGACAGAATTTTACCTTNCATGGGTCTNCATCACCCCCNCTATCCCATC  
 CTCTNCATGGAANTACATATAACTAAATCAAAGAGAGCTTAAATCTCAAAGAGCTATACTTTATTAT

>'000127a-050.scf' came from CONTIG 45 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
 050.scf"(52>430)

GCACGAGGGCCACCCCAACCTGCGGGCACACTTTGAGGAGGAGGCGAGGGTGGCCGGGCTGGGCTG  
 GAAGGTGAGGCTGGACTCCTGGTAAGTGTGAGGCTCCCTGGCACAGGGCTTCCCTGTGTTGTATAATC  
 AGCTGTCACCTTCAGCATTTCCCTGCACCGTGCTTACAAGTACAGATCGAACATTAAACAAACAGTGA  
 15 CTGCTTTATAAATATTTAACTCCCACTGTTTAGGAATTGCTTTGAGGCAGAGACAAAATAAGAGTTCCT  
 GGGCGGGCTGCTGCATGGCCCCCTCTTAGTGCTTTGNATTGTGAAGACAGGNTGTTNNGNAGTTTGAA  
 GGGCAGCTGTATTCTGAAAGCCCTTTGTCCATAGGCTTT

>'000127a-051.scf' came from CONTIG 46 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
 051.scf"(43>355)

TTAAAGTTGATAAAGAAAAAGTGGTTGTATCGAACTCCTCTACAGATGTGAAGGAATCAAGTACTAGTC  
 AAGCAAATTTTCTGCAGATTATCACAAATCCATGAGCTGAGTGACTGTGGCTTGCAAATCATTTGTCTC  
 TGGGTCTGATGTAGTTTCTTCTCCCAATTTTGAAGTACTGAGAGAGAAATAGTCATCAAACATATGA  
 25 ANTTACTGTGTAAGAAAAAGTGATTNNGTGATGCTGAGGTGATTCAAGGTCTTGCTACAGAAGTAT  
 TAATCACCCCTGTGCTAGAATGCTCTTATGNNGTAGNTC

>'000127a-052.scf' came from CONTIG 47 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
 052.scf"(48>395)

CTTAGTGGATCTTTCTTGTGGCGTGCCTCTTCTGCTCTATGCGTGCTGAAGGCCGTCAATTCACCTATGC  
 CGAGCTAAATTTTCTGCCAATTATCACAAAGCCATGAACTGTGTGACTGCGCGGTGGCAAAAGCGTTG  
 30 TCCTCTGGGTGCTGCTGTCCCTTCACTTTCCGTCCCCTCTGTGCGTACTATCGAAAGAGAAATGAGGCT  
 GAAATCTATGAAGTACTGGGTGAAAGAAAAAGGTGAGAGGTTGAAGCTGAAGTGACCATGATCTCGC  
 TTACAGAAGAATTAAGGCACCCCGTGCTAGATAAGCATGATAATGAGAAGCCCTTGCATAACCAAG  
 AAGACT

>'000127a-053.scf' came from CONTIG 48 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
 053.scf"(49>527)

CAGAGGTGCAACTTTCTTCGGTCGTCCCGAATCCGGGTTTCATCCGACACCAGCCGCCTCCACCATGCCG  
 CCTAAGTTCGACCCCAACGAGATAAAAGTCGTGTACCTGAGGTGCACCGGTGGGGAAGTCGGTGCCAC  
 40 GTCTGCCCTGGCCCCAAGATCGGCCCTCTGGGTCTGTCTCCAAAAAGGTGCGGTGATGACATCGCCA  
 AGGCAACTGGTGATTGGAAGGGTCTGAGGATTACAGTGAACTGACCATTGAGAACAGACAAGCCCA  
 ATTGAGGNGGTACCTTCTGCTTCTGCCCTGATCATCANAGCCCTCAAGGAACCCACCAGGNACAGANA  
 GAAGCAGAANAACATTAAGCACAGGGAANACATTACTTTTGATNNGAGATCGTCACATTTGCCGGNC  
 AGATGCGCATTCGGTCTCTAGCTAGAGATCTTCTGGANCATTTAGAGATNCTGNNGACGNCCACCTG  
 45 TGGN

>'000127a-055.scf' came from CONTIG 49 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
 055.scf"(48>610)

TTCCAGGTGCTGCTGGCCGAGTCGGTCCCCCGGCCCTCTGGAAATGCTGGACCCCTGGCCCTCCT  
 50 GGCCCTGCTGGCAAGAAAGCAGCAAGGCCCGCGGTGAGACTGGCCCGCTGAGCGTCCCGGTG  
 AAGTCGGTCCCCCTGGTCCCCCTGACCCCGCTGGTGAGAAAGGAGCCTCTGGTGCTGACGGACCTGCT  
 GGAGCTTCTGGCACTCCTGGACCTCAAGTATTGCTGGACACGTGATGTGTTCTGCTGCTGGTCAGAAA  
 GAGAAAGAGCATCCCTGTCTTCTGCACCTCTGTGAACCAGCAAACAAGTCATCTGAGCAATAGAGAAC  
 TGCCCCCTGTCCCATGGCCCCCTGATTGTTGTACCCTGTGAGTTGTACGGGAGGAGTCTGGGTGAGTACC  
 55 TTGACAAATGTTTCGTGCCAGGGGAGGGGGGAACGCCTTTGACCTTGGGTTTCGGCTCCGCGGCCCGCC

TGCGACTGCGCAGAGGATGGGGGACGGCTGGGCCTGGTCTTGCCGGGGCGGGCCGGGCCAGCCCCG  
GGAGGGGAAGAAAAGGAA

>'000127a-056.scf' came from CONTIG 50 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
056.scf"(49>595)

CTCGAGTTTTTTTTTTTTTTTTTTTTTATTTTCCTTTTAATTTTTCTGAAGGATATACACCACATATCCCATGG  
GCAATAAAGCGCATTCAATGTGTTTATAAGCCAAACAGTCACTTTGTTTAAGCAAAACACATGTACAAA  
GTAATAAACCACAAAATAATGAACTGCATGTTTACATAACATACAAAAATTGCTGCCTACTCAGTAG  
GTAACATAACATTCCAACCTGAATTATATTTATAAATTTACATTNTCAGTTTAAAAAATAGACTT  
TTGAGAGTTCGGATTTTTAGATTTTGTCTTACATTCTGGAGAACTGGAGCTCAAGCTCAGCCCCCTT  
CCTTGTCTTGTCTCCAAAGCCTCCCCCGATCACCCTCCCTTGCCCCCTNAGCTAGAGGTGAGCACA  
TCCCTCACAAATTGCACTGTCAGNCCGNGTCAGCAGGNCGCATCACACAAAGGCACCCAGAGTGNAAN  
CTTNTTAANCAAAAGNNACAAAAAATACTTCAAAAAAGAGAAAAACAACGNNATTGCNCTGGGA

>'000127a-057.scf' came from CONTIG 51 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
057.scf"(49>619)

GTGATATTCAAACGAATAGTCCGTCAACCCAGACACTGGTTTGAAGAAATTGAGACTTGATCATAGG  
ACTGTATTAGTGACAGCGCCAGCATGTATGCTAGGAGCAGTGGGAGGAGGCCAGTAGAAAGCCTTG  
TCATCTTTAGGGGTAGTGATGTGACTGCTATTTGGAGTGTCACTGAAAAGGAAAACTTTAGCATGCTC  
ACTGATCTGCCTATAGCTCCAGCAACAGCTCGGATGTGCGTTCTCCAGCCATCATGAGGCTGAGTCAA  
GTTTCGTCTCTAAGTCAGAACAGCAGATTCAGCTATGACATTCTGATTCAAGACATTGTTTCAGGAATCA  
GAATTCTGTCTATTAGACTGGGACAGCTGNGGCAAGCTAAATTGCTGTNACAAGCCAGATTTTTTTTT  
ATTGATACTGTAATATTGTGTGTATTATATATTGTACGNTATCTAAGTTATTAAGAGTGTGTGCTTT  
TTGNTTTGTTTTATGCTTGATATTCAGAGTTAGCTCATTTGACACATAGTAGACGAAGCTGTTGATAT  
CAAGCAGATGAATCAATAATTTGG

>'000127a-059.scf' came from CONTIG 52 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
059.scf"(50>595)

GCACGAGGCCGGTGTCCCCGCGCCAGAGACGCAGCAGCGCTCCCTCTGCCCACACCCACCGCGCCCTC  
GCGCTCGCCTCTCCTTCCGGAGCCAGTCCGTGCTACCGCAGTCGCCCAGTCCACCACCAACCCTCTGCAG  
CCATGTCCACCAGGTCCGTGTCTCGTCTCTACCGCAGGATGTTTCGGCGGCCCCCGGCACCGCAAGTC  
GGCCGAGCTCCACCCGGAGCTACGTGACCACATCCACCCGCACCTACAGCCTGGGCAGCGCGCTGCGC  
CCCACCACCAGCCGCACCCTCTACACCTCGTCCCCGGTGGNCGTGTACGCCACGCGCNTCTCGGNCGT  
GCGCCTGCGAGCGGNCGTGCCCGGCGTGCGGNTGCTGCAGACTCGGTGGACTTCTCGTTGGCCGACGC  
CATCACACCCGAGTCAAGACACCGCACAAAGAGAAGTGGAGCGCAGGACTCATGACGCTCGNCACTAC  
TGACAGTGCGCTTCGGACACAAACAGTCTGTGCTGAGTGGCACTCAGGCAAGCAGGCGCGGGGACTT  
AA

>'000127a-060.scf' came from CONTIG 53 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
060.scf"(1>277)

AGGGCGGTTAATAGTCCGCGAGACCGTCCCTTCTCAACCCAGTTTTGAAGAGCTCTTATCTTCAAAAA  
GAACTCTTACTCAAGTTTAAACATCACAGGGCTGACTACACTAGGGGGTTTTATTGCCTCTGTGCTTGT  
TCTTAAATCTGTTTTGGACGATCGCTACGAATCACTATGTCAATCAGCAAGGTGAAGAACTAAGACAT  
GAAGGAGAACCGGATGTCTTGTGTTGGCCTCTCATTTTTTTGACTTGGGGAAGACGAGGTTTGGCTG  
GTT

>'000127a-061.scf' came from CONTIG 54 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-  
061.scf"(55>678)

GCACGAGGCTGTCACTTTGTAAAGCTTTCAATCAAAACCACCCTGAAAGCACAACAGCAGAATTCAAT  
GATTCTGACTCTGGCATTTCACTGAACACAACAAGCTCCAAGCATGGCATCACCAGACCACTCAGTGG  
AATCTTCCATCTATGGAGACACATTGCTTGGCTTCAGTGATTCTGAAATGGAAGAGATAGATAGTACC  
CCTGGAATGTCAAACAGAAGGGGCCAAAACACCGCCAGTGTGGCCTCCTGGGGACCCAGTCCAAC  
CTTTGTGCTCATCACAGGGGAACAGCGCTGCAGCACGCGATTCCCAGAGTGAAAACGCACCAAAGAA  
AGAGTACCTGTAAGTCCGGGTCATCGAAAAACGCCATTACATAAGACAAACATTAGCCGCTTGGAG  
GCTCACCTCACAAGAAGAGAGCTACGGNNCAAAGCTCTCATATCCATTCTGTAGAAAGACATTACCT  
CCAGTTGAGACTTCATGAATGAGTGCAGGAGCATTACAGAGCTCACTGCATAATTTAAACTACTAGAG

GGNAGATAAGGGCTGTCAAAATGCAAAAGAAACGGAATATAGGNACGGGCAGATTAATATTA  
AAAAGAAAAAGTCAAG

>'000127a-062.scf' came from CONTIG 55 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-062.scf"(47>628)

CTGACAGTGAGCCCGAGTCCGAGGTATTTGAAATCACGGACTTCACCACTGCCTCGGAATGGGAAAGG  
TTTATTTCCAAAGTTGAAGAAGTTTTGAATGATTGGAAATTGATTGGAAACTCTGTGGGAAAGCCACTT  
GAAAAGGGTATATTTACTTCTGGGACATGGGAAGAGAAATCAGATGAGATCTCCTTTGCAGACTTCAA  
GTTCTCAGTCACTCATCATTATCTTGTACAAGAATCCACTGATAAAGAAGCAAAGGATGAAGTACTAG  
AAGATGTTATTTCCACAACCTATGCAAGAATTGCTGTGTATGAATAATGACTTTCCTCCCAGAGCACATT  
GCCTGGNAAGATGGNATGGNACTCGAGAGNTNGGGNNGATAGCACCTGCTGCAACATGATGCTGTC  
CTCATGAATCTAAGTGCATCTTCTCTGACTCTGTGTCTATGGCTTGGAAACACTGCTGNCAGNGCCACT  
CTTGTGCAGATCTCACAATGGCGAGATGATGGGNNGAAGTCAGGNNCTGGGNNGGACTGATTGAATG  
GTCTCTCGAAAGGCCAATAGATACTATTTCAAGNCTGT

>'000127a-063.scf' came from CONTIG 56 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-063.scf"(48>639)

GAAGGATTTTCCAGTTAGTTTCTCCATGTTTGCCCGAAGCCCAAAAAGTCTCTGTCCAGTTCTTTGTTA  
GGACAGTAAGACCCAGTGAAGCCCAAGTTAAGTGAAGGCCCTGAATAATTCCAGAAGACCCATTCTT  
ATCCTTAAAAATCCTAGAGTGGTCAAGGGACAGAGTGATTTGTTTCCGAAAAGAGTCCGAGGTATATGTG  
TTAAATTTAGAAACATTATTTTGTGCTGCGAACTCTCATGATGTTGACCAGAAAGAAATCACTTGCATT  
TTATACAGTGTGAGTTTGAAAGCTGATGAAGTTTCGCATTCTTTTATAGGAGGTCAAGAAAGGCACAN  
NAATGCTGCTGCAGAAAGNGGNGGNGGNGTCATTNTGCCAGTTGTCTAGCTTGATTGCAGACGGTTCT  
GTTNAGTGTTATGGNCGTGTATGTATCACTCATTTCATGGTTGATGAGTAAATATGATGAAATGNCTGA  
NACTGAGGCTGGNATATACAAATGCAGCTGACCTATCTCAAGACTACGTCAGCAGGTAGCAACTAACA  
TATCTAGAGTATATTTGTAATTGATATGAACAGAATTACGAGTGGG

>'000127a-064.scf' came from CONTIG 57 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-064.scf"(50>649)

TTCCAGTCTGTTCACCTACAGAGTCCCAACGTGGTTATTGCAGGCAACGTTCCCTCTCTCCGTGGT  
CTAGAAGCCCCTCCCCAAGGTAGAAAGAAGGGAAGAAGCTAACTCCAGTGTTTCCGTTGCACTGATC  
CCCAATTCAGTCCAGGAGGGGGCTTGTTAACCCCTCTCCCTCAATATCCTGGCACCTTGGGCTTGTGAA  
CGCCTCCTAGCCAAATCACTAGAGTACAGTGACCCAGCCTCCTGCCTGTCCCGAGTGAGCCCTCCCC  
ACCCTGACCGTGCTAACTGTGTGTACATATATATTCTACATATATGTATATTAAACCCGCACTGCCATG  
TGTACCCTTTTCTGTGGTGTCTAGCATTAACTTATTGTCTAGGCCGGGCGGGGTGGNAGGNAAATGCCA  
CAGTGAGGGNGTGGCAGAGTCAATTGCTATATATCGAAAAGAAAACCTTTTAACTTTNATTCACATGC  
ATCTCAGAGATATTANAAGTTAGGAGGGGGAGTTTGGAGTGGGAAAACTTAGGGAGGAGCTGCTGT  
GNAGAAGAACAATGCTGGAGACCTTCACCAGCACCGCCTTGCCTGTGGCA

>'000127a-066.scf' came from CONTIG 58 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-066.scf"(53>292)

GCACGAGGCCGGTCTCCGCGCGGGTCTGGGTCGCGGAACCCGGTGGCTGCTGTGCGGGCGTCATGTCA  
GACAACGAGGACAATTTTGATGGAGACGACTTTGATGACGGGAGGAGGATGAAGGGCTCGATGACTT  
GGAAATGCCGAGGAGGAGGGCCAGGATAACGTTGAGATTCTCCCCTTTGGAGAGCGACCGCGAGCCA  
ACCANAAACCAATCACACACCATATATGACCACTATGA

>'000127a-068.scf' came from CONTIG 59 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-068.scf"(49>600)

GCTCTTCTTTGTTTCCAGCTACAACCTGCAGAGCCATCACATCCCAGGAACATTTAGGCAAAATATAA  
AGGTGTGTGTCTAAATATGTCTTTGAAGAAGCACTTCCTCCTTCCTCAGTGCTTCTGTCCCACTTGGCT  
TCTGCTTGGCCACCTGGGGCTGCCGCAAAGCAGGTTAGTCCTTTCTGGCCCTGGCTGTTGAGTGTGTTG  
TGTCACAAAAGTGTTTAAAGGCGCAGTGGAAGTTAAAGAAGTCTAAGACACAGTCCTTGTCTTAAAAA  
GATCACCGGCAGGNTAAAANTACAGTGCTAAAATATAAGCGTATACCTGAGAAATCATTCATGTTTCAG  
CTGTTATTGGAGTGTCTGCTAGGTGCAGACTGTAGGGTGAATTATAATAAAGAATAGACTGNTGCT  
CCTCAGCAGTTCTGTCTCTCAGAGGTATCGAGTATATATCAGATAGGAATATTGGAGCCCTGCATGCCT



>'000127a-075.scf' came from CONTIG 65 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-075.scf"(55>670)

GCACGAGGGGTATCTGCTCACGCCATGAACAACTCTGGCCCCACCGCCCAGATCATTGAGCGGGAGGG  
CTGGAAGACCAACATGGACTTTGTTGGGCATCGGAAAGCTGTGACTGTCGTGAAATTCAACCCTAAAA  
TCTTCAAGAAGAAGCAGAAGAATGGCAGCTCCGCGAAGCCCAGCTGCCATACTGCTGCTGCGCCGTC  
GGCAGCAAGGACCGCTCGCTGTCCGTCTGGCTCACGTGCCTGAAACGGCCTTTGGTGGTCATCCACGA  
GCTGTTTGACAAATCCATCATGGACATCTCCTGGACCCTGAATGGGCTGNGCATCCTGGTATGCTCCAT  
GGACGGCTCCGTGGCCTTTCTGGACTTCTCCTAGACGAGCTGGGAGAACCCTGAGCGAGGANAGTAG  
AGCCGCATCCACCATCCACTACGGCAGAGCTGGCCTCATGACGAGCCCACTGTCACGCTGTCATGAGA  
CCAGAAGCTGAGTACAGGCAGCGCACAGTGGACGCAGGNCAGNCAGGACGCGACCGGNCAGAAA  
CGCTCGTCTCTTCGCGGGGTACAGGGGAGCTGAAATAGAACTTGATAAAGAGGAGGACGAACGGGGG  
AAAACC

>'000127a-076.scf' came from CONTIG 66 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-076.scf"(50>518)

TGGAGTTCTCCACCCACGCCGGTTCTGGCCTGCCATTGACGACGGGCTGCGGCGGGCTGCCTATGAG  
CGGGGCGTCAAGGTACGCCTGCTGATCAGCTGCTGGGGACACTCTGACCCCTCAATGCGGGCCTTCCT  
GCTCTCCCTGGCTGCCCTGCGTGACAACCACACCCACTCCGACATCCAGGTGAAACTCTTTGTGGTCCC  
TGCGGACGATGCCCAGGCCCGAATCCCTTATGCCCGCGTCAACCATAACAAGTACATGGTGACTGAAC  
GGGCCACCTACATCGGAACCTCCAAGTGTCTGGCAGCTACTTCACCGAGACGGCAGGCACCTCGCTG  
CTGGTGACACAGAACGGNCGNNGTGGCCTGCGAAGCCAGCTGAGGNCCGTGTTCCGGGNTCTCCCATC  
CCTGTCCCTGTGCCNCCGCTCTGTTGACCCGNTGTGATCANAGGCTCCTNTCGCAACC

>'000127a-077.scf' came from CONTIG 67 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-077.scf"(55>522)

GCACGAGGCAGTGCTTTTCGACGGTTCGTGGTGCGGACCATGTGTGCAGTGCTGGGGCTCGTGCGCCG  
GCAGGAGGACTCTGGACTCCGGGATCACCGTGTACGGGTCTCATTTCCAACCACGTGACACCTTTTCG  
ACCAACAACATAGTCAACTTGCTCACCAGCTGTAGCACCCCTCTACTCAATAGTCCCCAAGCTTTGTGT  
GCTGGTCTCGNGCTTTATGGAGATGGATGGTACAGGGCGAGNTGGTGGAGTCACTCAAGAGATTCTGT  
GCTTCAACAAGGCTTCCCCCTACCCCTCTGCTGCTATTCCCCGAGGAAGAAGCCACCAATGGCCGGA  
GGNNGCTCTGCGCTTCANTTCTGCGCATTTTCTATTTCATGATGTGGTACAGCCTCTTTACTGNCGAGT  
NCAGAGACCTCTTGCTCTCGTGACGGTGTGATGCATCTGGGTCTANAATGCTGGTNT

>'000127a-078.scf' came from CONTIG 68 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-078.scf"(1>349)

CCCCGGGCGGCGTTAACTAGGTCCCGGCTGAGCGGGCGGGCATCCCAGAGGCCAATTTGCTGACCCCTG  
GCCCAGAAGGCAGTGAGCTGGCCTCGCTGCAGAACACAAAGGATGCCAGTGGCTCTGAGGAGAAGA  
GAAAAAGTGTGTTGGCTTCAACTACCAAGTGTGGGGTGGGAGTTTCTGAGCCTGCCTTANCCAAGCG  
AGCACGAGAGGACAGCGGGATGGTACCCCTCATCATCCAATGTCTGTGCCTGTGCGGGCAGTGGACC  
CACTGANGCAGCTCAGCTGNAGGTGTGATGAGATGAAAAGGTNCCGACAGCACCTGCTGACACAACC  
GTCATCATTTG

>'000127a-080.scf' came from CONTIG 69 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-080.scf"(22>530)

TTACCATGGATCCTCCGACTGCATGCAAGCTGAGTGTCTTCCCTTGCCGTCCCCGCTCGTACAGTCTC  
GCTCATCTCGTTGCCGCCAGTCCCCGCGCCCCCGGTACGACATCCGGCCCCCGTAGCGGACG  
CCATGCTGCGGGCACGCCCCGTGCTTTGGGCTGTGGTTTGGACCGCACTGACGTTGTTCCGCGGTCCG  
CGGTGGTTCGAGCTGGGGCGGGCAGCATGGGCGCGGCCAGTGGTGGCTGCGAGCCGTGCGATGC  
GCGTGCCGTTGCCAGTGCAGCTGCGCGCTGCGCCCCCTCCTCCCGTGCGCCGAGCTGGGCGCGAGCCGCT  
GGATGCTGTCTACGAGCGCGCTGCGCGAGGTACGCTGCGACGCCATCCGAGGGTGTGTTCCGGCTC  
GTTGTCGTCGCGCTGTGATCGCGCCCGTTACAGGTTGTGGTGGCGGGGCTCGGCCATGCGCGCGTGTGC  
GCTGCCTTACCGTTCTGTCGGTAGGATGCGTGG

>'000127a-081.scf' came from CONTIG 70 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-081.scf"(47>636)

AATTGGCCCCGAGGCGGATCGCCCCCTCGACTGCAGTCTTTTTGCATCCGAGAGACCATGGTGGGCTCCC  
CGCGCGCCCCACTGCTCCTGCTGGCATCCCTGATCGTCGCCCTGGCCCTGGCCCTGGCCGTGAGCCCCG  
CGGACGCGCAGGGCCCTAGGAAGGGTCGCCTGCTGNGCGGCCCTGATGGAGGCGGACGTCAATGAGGA  
GGGCGTGCAGGAGGCGCTGTCCTTTGCGGTCAGCGAGTTCAACAAGCGGAGCAACGACGCTTACCAG  
5 AGCCGCGTGGTGC GCGTGGTGC GCGCCCCGCAAGCAGGTCTGTGTAAGGATGAACTATTTCTTGACGG  
GNAGCTTGCCGGACTACATGTACCAAGNNCCCAGCCATCTATACAGCTGTCCTTTNCATACCAGCCG  
CACCTGAGAGGGAAAGCTGTGCTCTTNCAGTNTACGNCGNCCATGGATGACACATCANCTGNTGAANT  
NAGCTGCAGNATAACAGCAGCCACTGACCGCTTCTATCTGCTCTGCGAAGCCACACTGGNGGNNGATGC  
TATGGCGGCCTCCCATGCGCCTGCAACAGCTCTGGCATGNTGATTGC

>'000127a-084.scf' came from CONTIG 71 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-084.scf"(49>316)

TTTAGGAGCCAAGGCAATTCAGCTGAACAGTAACAGTGTTCAGCTTTGCTACTTAAGGGAGCAGCGC  
TTAAAAACATGGGCAGAGTCCAGGAAGCAATAATACTTTTCGGGAGGCTATACGTCTTGCGCCTTGT  
15 CGCTTATATTGTTATGAAGGTCTCATTGAATGTTACTTATCCTCCAACAATATTCGTGAAGCACTGGTT  
ATGGGCTATCATTGTTACTAACTCTTAGAGCAAATGCACAAACCTTTTACCTTTACCACCGC

>'000127a-085.scf' came from CONTIG 72 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-085.scf"(49>427)

20 TGAGAGTGAAACTGCAGCCGGCGTCCAGCTCTAAGCTTCCTGCTTTTCAGTCCTTTGACGCCTCCAGCTG  
TGATCTCTCAGATGCTGCTGCTGGACAATCCACACAAAGAGCCCATCCGGTTACGGTATAAGCTGACA  
TTCAACCAGGGTGGACAGCCTTTTCAGCGAAGTAGGAGAAGTGAAAGACTTTCCGGACCTGACAGTCTT  
GGGTGCAGCCTGACTCCTCCCATGACAGAGCTTGCCGTTACGCTTATGCTAATGTTCTTTTGCTGTC  
TAGATAGGACTGATCATGGTGATTTAGTGCAGAGTGCCAAGAGTTCTGTCCTGACATCNAGCTCTGGA  
25 TGCCAGCCTCCGACTTATTTGCANAGTGTGTTGTGGT

>'000127a-086.scf' came from CONTIG 73 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-086.scf"(49>664)

30 TTTTTTTTTAAAAAAGATTACAGAAAACACTTTACTGAAATTCTTCTTTTGCTAAAAAGACAGTCGTT  
AAGGATCTGAGAGACAGCAAGCACAAACAGTACAAAAGGAGAAGGGAATGTTGAATTCAGTGCAA  
GACACTAACAGCAGCACAATTAGGGAACCAGGCGGAAGCAACCATTTCACAAAGAATGGAATTAGGCA  
TTTATACTTAATCAGGATTTTTTTAAGCTTTAAAAGTCCAGCATAAAGAAGGGAATTGNGAAGAGTGG  
ATGGNGACAGGGGCTAAGCTTATCTACAATCACCATTTTACCAAAAAACACACTGGCTCAACCACGTG  
AGAAGNGGAGGNTAAACCTGCCTACAGAGGCCAGCAATAGAGCAAATGCCTAGGCAGTCACATTTT  
35 TAGGTGTCGATGTCACATTGGCTGTACATGTTAAGGGACTTGATTACCAGACTGGCTCCATCACCTG  
GCTACGAAGTTGAGTTCTTGCAATGCTCAGAGNCAAGCTTACTGNAGAGTCATCAATAGCTAGTGCTG  
TTTACGNTGCGNCAAGGCTCTATAACTCACTTCTAGGAGTTTAGATACAGATTAATCAGCACCTAGA  
GGAAA

40 >'000127a-087.scf' came from CONTIG 74 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-087.scf"(50>630)

CTACAACCACCTCTACCTCCAAGGCAATAGGATCAATGAGTTCTCCATCAGCAGCTTCTGCACCGTGGT  
GGATGTCATGAACTTCTCCAAGCTGCAGGTGCTGCGCCTGGATGGCAACGAGATCAAGCGCAGCGCCA  
TGCCCGCTGACGCGCCCCCTCTGCCTGCGCCTGGCTAGCCTCATCGAGATCTGAGCGCCACTGGGCGCA  
45 GGGCCATGCCCCACGCCTCTTTCATTTGGCTTGATGGTTTGGTTTGGCTTTTGATGGAAGGTCTGNG  
ACAGACCGCGTGACAGAAGNCCATGGGCTCTCTCTAGTCTTCTTCCCTGTAGGCAGNTNTAGGGGN  
AGNCAGGGAGACAGCAGCNTTCTGCTGAAGGACATGACACGTCCGTTTCCAAGACAGAAGTGGTTGG  
CAGAAGGTNGTAACCTGAAGNCCAGNCCCCGAACTCATACCCTCAGTCTCACAGGATCAGGGNCT  
GACATGNCTGAGCATAATACTGGCTTTGAGTATGCTGATTGAAGCAGACTGACGCTCCCGGGCGGCTG  
50 GCGGCGAACTTGGCCCNAGTGTGTTTAATTACCTTGC

>'000127a-089.scf' came from CONTIG 75 at offset 0;"E:\SEQUENCE\export\EST\_db\000127a\000127a-089.scf"(55>387)

55 GCACGAGGCCCTGTACACATATCCTGAAAACCTGGAGGGCCTTCAAGGCCCTCATTGCCGCTCAGTACA  
GCGGGGCTCAGGTCCGCGTGTCTCTCCGCACCAACCCCACTTCCATTTTGGCCAAACCAACCGCACCCCC  
GAATTTCTCCGTAAATTTCTGCTGGCAAGGTTCCAGCCTTTGAGGGTGACGATGGATTCTGTGTGTTG











GGACCTGGAGTGCTCAGACTGCCANAGAAGCTTTACCATCTGGCATCCCTGGGGCCCCGGGCACATTCC  
CCTCTTGTTTTGAGGGAAGCATGCCAGGGGGGACACTGGCCCTTCATCACAGNTGGAGGAANGCAGAA  
GGGNNCAGANG

5 >'000128a-010.scf' came from CONTIG 9 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
010.scf"(316>320)  
TTGAA

10 >'000128a-012.scf' came from CONTIG 10 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
012.scf"(43>539)  
TCTCAACTCCATGATTTGTGGAGAGAAGGAACGAATCTTTGATGGGAAAAACAGAGAAAAATCCCTCT  
TTTTTCCCCCCCATTCTTATAAAATCTTCCTTTTCATCAGTTTTTTATAAAAGTTGCTTTTTTTCATTTGCAA  
GTTGTACAGTTTACCACTACTGCTGCTGCTACTGCTAAGACGCTTCAGTCGAGTCCGACTCTGTGCGAC  
CCCATAGACGGCAGCCACCAGGCTCCCCTGTCCCCGGGACTCTAGGCATTTAGAAATNTTTTTATCT  
15 GTGAGGTATTATAAGTCATTAATACTATTCCCTTTCGATAATAGATGTAAGCAACTATTAATAATATTAGT  
TAGTCACAGATTTGACTGAAAATCTCTTACAAGAAGAGGAAACAGAAATAANGAGCAGNTNGAATGGN  
GCTGNNACATGGAAACATCAAGAAAGGNGACACACTGTTTTTTTTTCTATCTCTATGTTTAATTTAGN  
AAAACAACNTTGATG

20 >'000128a-017.scf' came from CONTIG 11 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
017.scf"(100>532)  
AGGAAGGTCGGGGCTGGGGGGGGGAAGGCGCGGGGTGGGGGGGGGAGGAGGGGAAGGGGAGGGG  
GGGGGGGGCGAGGAGGGGAGGGGGGGGAAAAGGGGGAGGGGAAGGGAAAGAAAGGAGGGGGGAGA  
AGAAAAGAAAAGAGAAAGGGGGGGAATTTGAGAAGGAGGGGAAAAAAAGGGGAAAAGGGAAAAAA  
25 GGGACAAAGGAAAAGGGGGGGGGGGCGAAAAAAAACGGGAAGGGGCCGAACGAAGGAGGAAAA  
AACAAAAGGGGAATTAAGCAGAGAGGGAAGGGGGGACTACGGGACAAAGTTGGGAATGAAGGAA  
CAAAGGCCAAAAGACGCGCCCCAGGGGCGGGGAAAAAAAACAAAAACGAGATACCGAACGGGAAAGG  
AAAAAAAGATACGATTAAAAACCCCCCCCCCAATACGGGAA

30 >'000128a-018.scf' came from CONTIG 12 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
018.scf"(60>253)  
AAATATTAAGAACGTAAGAAAAGCTCACTATATAGAAAATGCTATACCCGGAACAAAACAATGGGGC  
AAATGCTGGTGGAGGAGACAAAAGGGAAAAGCAAAGGCAAAATGGCAGGGAGGAAGGGAGAGGAA  
AAGAAACCGGAAGGGCGGGAAAGGCAGGGAGAACACCGCGGGTGAAGGGCGGGATAGAGATG

35 >'000128a-019.scf' came from CONTIG 13 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
019.scf"(99>348)  
AATAAGAAATAGGCTCCTTGTAAGTCTTTATGAAAACGGAAACTTAGAGGGTAAGAGGACTGGTGGG  
GAATACAAGTTGGTTGGGATTAAGAGATGATGAGCAGGAGAAAGAAAAATTATGACCATATATGGAA  
40 TGGAGGAAGAGGAGGGAATATGGGAGAAAGAAAAGGGAAAGGGACGGACGGCGGCTTTGAGGGAAG  
AAACGCGTCTTCCAAGAAATAGAATAAAAGAAAAAGAAGAGGAGGGGGG

>'000128a-020.scf' came from CONTIG 14 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
020.scf"(1>365)  
45 AGGGGGGTTAATAGACCCGCGCGGGGCGGCGCTGATACACCACCTGGGGGAACCCTTCCGCGCAGA  
GAAAAGACCTGGACCCAGGCAAGAGGGACAGAGACATCCAGCCGAAGAAGGGCGCCTGAGAAAAACA  
TATATGGGAACGACAAAAGAGACACTATGAGGCAAAGGGCCTGGGGATCCATTGTAGGAGGGATCCA  
AAGCCAATGCCTCAGCGCGGAAGAACCTGGCCTTGGAACCAAAGGCCACACACCGCGAAGGAGCCAA  
CAAAAAGGGGAGGGGGCCTCTTGGAACGAAAAGGCTGCCCGAAAAAAATAATTGAATTGGGGGGGA  
50 AAAATGCAAAAAACCTAAGGGGGTTGGCCGC

>'000128a-021.scf' came from CONTIG 15 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
021.scf"(3>262)  
GCGTGGGCGTTTAACTCGGTCCCGTCTCGCGTTCCGGCCTTTGATATCTTTCATCTTCGTTGGGTAAACCG  
55 ATCTCGCGCAGACTGAAAATACCCTGGGGCACCTATGGCCACAAGCTTGGTGACCCAAACGCTACCA

CTCGCCAGTTGCCGGACATGATATGTGCGCCTGTGAGATTAGAGAGATAAGGGGAAGTGAGAGAGAG  
AGAAGAAGAGGGGGGGGGGGAGGGGGGGGGGGTTTTGGGGGGGGGGGAGGGGG

>'000128a-022.scf' came from CONTIG 16 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
022.scf"(411>415)  
CAGAA

>'000128a-023.scf' came from CONTIG 17 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
023.scf"(336>462)  
GGGGCGCGCGGGCTCTGGTGGGCCGGGAGGAGGGGGTAGGGGGGCACGGGGGGGGGGAGCTTTGGC  
AGGATAGAGGCCCAAAAGGAGAGGGAACCCGCCGCCCGGGGGGGGCAGGGCCTGGGCGG

>'000128a-024.scf' came from CONTIG 18 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
024.scf"(29>467)  
GGCTGTGTGGACTTACAGGACTCTGAGGGCGCTCCTCATGAATGAAAATTAAGCAACACGGAGGGAA  
GGGAAAGCGCACCACTTCATATAACTTAAACAGTTGTGAGCAACCTGGCTAGCCTGGCTGGCGCTATG  
AGACGGGAGCTGGGCACGAAGAGCCACTGGTTCGTAAGAAAAGGAAGTCGGGGAGTTTGAGGCGCAA  
AAAAAAGCCCGCAGCCCCCGACCGTCAAGCCAAATGGGGCCTGGGGACCAAGGGGACCAAGGGAC  
GACCAGCGGGACAGGGCCAGAGGAACGTAAGAAAGGGCAACGCAAAGGGCAAGGCCGCCACCGCTA  
AACCACACCGCACGCCGCCCAATAAAACATGGGGTAAAGCGCGCCTTTTGTCCCCGCCCCCCCCCTCAT  
TTTCTGGGGGTCTGGTATTTGTAAATTAATAAAATTTT

>'000128a-025.scf' came from CONTIG 19 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
025.scf"(1>247)  
CACGGGTGCCCTTTAATATGGTCCCCGGGCTGCTGCTGATTTCTTTTCTTTTGGTAGGCTGATGCACT  
TTGTTTTGCCAGTCAATGGCAAGATAAACTAAGTGAGAAAGAATGCAAGGGATAAAAAAATTTGC  
ATAGGGCATGTGAAAATGTCTCCATTTTGGTTGTTGGGGTTAAGATGGGGTGGTGTGGGGTGAAGTA  
GGGGATGGGGTTGAGGGGAGGAGGCAGGTGGTGAAGGGGAGG

>'000128a-026.scf' came from CONTIG 20 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
026.scf"(1>587)  
CAGGGGCGTCGTTTACTTTGATTCCCGGCTGCGGAATTCGCACGAGATTGATCTACCAGCTCCAATTAA  
AACTGCAGGCATAAGCCCCAAATGTGACTAATATAAAGCCCTCAGGCATGTAATTAATATATCCAG  
TGCCTTTTTTAGTTTAAATATCAAGATTGAATCTGTTATGTAGAGGCACCAAAATGAATGTCATGCTGG  
NAGTCTGTATGCATGACTCAAATATACCTAATACAATGTCAGAGNTGTATAAGCCAGCAGAATTTATT  
TTATAGCAATTCAGTATCTGTTTACCTACAGGNTCGGGGTTGGGGAGTATATTATGAAGAATCAGATT  
AGAAGTACTACTAAGAGACTATGGATCCACTATTAGCCACTCAATATAGACCACGCTAGACCCNAGA  
GAGCTATACAAAACAAATCTATTCNCCCTACTTATTTAAGTCTCCTTTATACATACCAGGCCTACTGC  
TAGACGAAAGTGAGGGGCTGGGAGGCACACTGACTCCCTTCCTGCCAGCATAGGAATAAGAGTCA  
AAGAGAGATACTCACACCTTTCCCCTTCGGGCTAAAGCGCG

>'000128a-027.scf' came from CONTIG 21 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
027.scf"(40>80)  
CGCTGCATGGCACATGCCGCCACAATGCCACACTATACCAT

>'000128a-028.scf' came from CONTIG 22 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
028.scf"(1>525)  
CACGGGGGGCGTCTAACTAGGGATCCCCGGCTCAGAACTGCACGAGTAGAACAACACACGTTA  
ATACTGCTGTGTGATATGAAGCCATAGATCTTCTACTATGCTTGGATACGACCTACGCCAGTGCAGA  
GTCGGGGGTGCGTGCTTACAGACCAGATGATGTATGATTTGCGCTGGAGCATGCGAGAAGATAAATAA  
CTACCCTAGCGCGAAGAGGCTCTATAGCATAAGTATGCGAGAACATGCGGACCAGTTCTGAAGTAGA  
ATAAGAGCATGCTGGAGCTGTTCTTGCACTGGACACAGTGAAAGACACATAGGCTGACAACAGATGT  
GCATGACAGATGAGAGACGACTACCGAGGAAGACACAAAAATAAGGAAAGGGCGCAGAAAGTGA  
GCACTCAGAGGTAAGTGGCGACATGGGACTTGGCAATCAGCGCAGGAGACGGGCCTACTCACGCTGG  
CTTTTGACACCTAATTGAGAAAGGAGCGAGGGCGACTGGGGGTGGGGGTGTGTG

>'000128a-029.scf' came from CONTIG 23 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-029.scf"(1>363)

AGGGGCTCTAACAGTCCCGCTAGATGCCAGCATCTCTCAGAAGCGCAGGTCGCACTCGGTAGGAGCGC  
GCCAGGCAGGCGGGGAGCGAGGGACGAGAGACGACAGAAGGGCCCTAACCGAAACTGTGCCGCCCA  
5 ACTGGCAGCTCGAGGAAACGTACGCCAGTGAGACCCAAAGTTTCCCTATCAGAGACGGCAGAACACTA  
CGGTGGCGAGAGCCCAGCCGAGCGCCAAGCCTCGAGGCGGGAGGAGCAGTTGGCTTTGGGCTGCTGT  
AAGCAGTGACCACACGCGTTAAAGTCTCAGACCCCAAAAAAAAAAAAAAAAAACGGGCCGCCAGCTAGA  
GTTAACGCGGTAGGGAGGACGGTCTTAC

>'000128a-031.scf' came from CONTIG 24 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-031.scf"(1>431)

AGGGGCTTAACTGTCCCGTAGCTGCTGGCCGGGTGAGACTTTTGCTACCCGATCAACCGGCGACGGGC  
GGTCGCTCCGGAAGTCCGAGCGGGGAGGGTCACTACTCTGCGACGAGGGAAGAGCGGCGTGTCCGAG  
CAGAGGAAAAATTGACTAATGAACGATAGAGCTCTAGTTTGTGCTGGACCCCGAGAACGACACTCCGCC  
15 ACCACGGATCCCAGGACTCTGACGAACCAAAAGCATGATGAGAGACGAAGTAAAAGCTTTGTGGGGA  
GGAGGGGAACACCTATCGACACGACCCCGTGACAAGGGATGGGGCACCTAGATGAAGAAAAATACAG  
TGAGTTATGAGGAAAAAACTGAACCTTGTAATTCCTAGAGGGGTAAATAATCAGGATGGCCTCCGCG  
CTCTTGCGAAACCGCTTTCTTTAAAG

>'000128a-032.scf' came from CONTIG 25 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-032.scf"(178>503)

GTCGCGCAGAACGCAGAACAGCCCCGAGATCACCCAGACTGCCGAACGAGCCAGACTTGGGGTGCCC  
CTCGAAAGCAGACAGAGCTGAACTAAAGGGCCCTTTTGGACGGGAACCACGCCTGATATTTACAAA  
25 ACAAGCGCAATAGAGAGCTGTATCCACCTACTTATAGCAAACCAAGGAGAAGGCCCAAAATTTTC  
AAAACAAAGAGAAAGACTGGGATTTGCCCAAAGTAGGAGGAGCGAACCGGATCCCCTCAATCAATGC  
ACAGATCAATTACTAAAGCTTCCCGCAAAAAGTGTGCCGCTCAACATTAGAACGA

>'000128a-034.scf' came from CONTIG 26 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-034.scf"(1>120)

CAGGGGGCGTTAACAGGATCCGGCTGAGGAAAAGTCATGTACGCATGCTACCAGGAAAGAAATCAAG  
GGACGGCACTTGAGAAGCCTTTATGGGGGGTGAGGAGGGGGGGGGGGGGGGGG

>'000128a-035.scf' came from CONTIG 27 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-035.scf"(54>235)

GCACGAGGCTGTTTCATTAGCTGCTTTATATGGAGAAGAGAGAAATTCTGTGTCTTTCCAGATCCCAAC  
AAGGGGTGCATAGAGTCTGAAGACATTCCTTTCTATTTCTTAATCCCCCTTCTGCTGTCTCTGGGAGT  
35 GCCTACTGGCACAGAGGCAAGGTATTTGCAGAGAACAGAAANGT

>'000128a-036.scf' came from CONTIG 28 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-036.scf"(43>286)

CCCGCGTCTACTTTCAGAGCCCCCGGGGCTGCGGCGAGGCCCCGGCGCGGACGAGAGGGCCCAT  
GAGGCGCCAGGGAAGGTCACGGTCAAGTACGACCGCAAGTAGCTACGGAAGCGCCTCAACCTGGAAG  
AGTGGATCCTGGAGCAGCTCACTCGCCTCTACGACTGCCAGGAAGAGGAGATCCCAGAGCTGGAAT  
45 CGACGTGGATGAACTCCTGGACATGGAAAGCGATGATACCCGG

>'000128a-037.scf' came from CONTIG 29 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-037.scf"(1>281)

CACGGGCGCTTAATAGGTCCCGGCTGAGGTTGGCTGTTATTGGATTGTGAAATGCTTACTACGAAAAT  
CTGAAGCTAGCCAACGATGATTGAAATCACAAGTGGGACAGCAGGAGGAGTATCAGCTCTCTGAAAC  
50 TCTCAGCAGCTCGCGAGCCGCATAACACTGCGACGATAACAGAGACGCTTGTTAGTCTTCTNAGAATCA  
CAAACCAGCAGATGAACTAAAGACGCGAGGACAACCTATTCATACCCATGTTGGAACATGACTTCAA  
AAATAATAAT

>'000128a-038.scf' came from CONTIG 30 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-038.scf"(8>426)



>'000128a-043.scf' came from CONTIG 35 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-043.scf"(334>638)

AGAAGACAAGGAAACAGAGAAGAACAAGGGCACCCAAACACACACACCCCGGGCCCTGCGGTTTCGG  
ACGGATGGTGCCGCCCTGAAGAACTCCAGAGGTCCGAAGGGACGGAAGGGGGAAAAGGGTTGGGTG  
5 GAAACCCCCCTTCCGGCGGCCATCTGGACCTTTTACCCAGAGGGGGCTCGCCCTAAGAGGTTTAT  
GTAGGCCGGGGGGCCGAATAACTGCAAAGAAATTAAGTGCAGAGTTTAAAGTGAAAATTTTTTGAAC  
CCTACCTCCTAATTTGTTTTCTGGGGGGGGTTAG

>'000128a-044.scf' came from CONTIG 36 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-044.scf"(1>359)

10 CGGGGGGTTATAGTCCGCTAGTGGCGCGGGTGGTTGTGAGAGGGTGTAATGTAGACAGCTATTAGAAT  
ACAAGGAATTAATAAAGGAAGGCAAAATGATATATGTGAAGATGTAATCAATAAAAAAGACACACACT  
AATCAAGTGTGGTAGACAAATATATTGTAATGCTATGCGATAGAGAATATGATTTTGGCAGCTTTGCT  
ACGACTCCAATATGNNGAAGTGGNCGAAATTTGTGGGTTTGACGGCGTGTGGCGCGCTCTATAGTGGT  
15 GAAATTTGAGCAGGAGGAGGAGATCAGGAAGTGGGCACGGCTTCTGTCGAGCGATGCAATCTCGATA  
GGTTGGGCTAGGGCGGAGGGT

>'000128a-045.scf' came from CONTIG 37 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-045.scf"(50>308)

20 GCACGAGGGGCAGAGGTGCAACTTTCTTCGGGCGGCCCGAATCCGGGTTTCATCCGACACCAGCCGCCT  
CCACCATGCCGCCCTAAGTTTCGACCCCAACGAGATAAAAGGCGGAGCGTGTCTTAGATGTGGGCGGG  
GCTTCGGGATGCGGCATCCCTCCCCGTATTNCGTCCGGGCGCGGGCGCCCGCTATGGGCTTTCCCA  
CGTCGGGCCTCAAGGCCGCTGCCTCCTAAGGGCCCTGCCTCTGGTGCTGNNNNNA

>'000128a-046.scf' came from CONTIG 38 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-046.scf"(54>610)

25 GCACGAGGGCTCCCCCTCCCCCGAGCGCCGCTCTGGCCGCACTGCGCTCGCCCTGAGCTCCGGGCT  
CCTGCTAAGCCAGCGCCGCTGTGCGCTCCCTCCAGTCGCCATCATGATCATCTACCGGGACCTCATTAG  
CCATGACGAGATGTTCTCCGACATCTACAAGATCCGGGAGGTGCGGACGGGCTGTGTCTGGAGGTGG  
30 AGGNGAAGATGATCAGTAGGACAGATGATAACATCGATGACTCGCTCNTTNATGGAAATGCCTCCGCT  
GAAGGCCCGAGGGCGAAGGTACCGAAAGCACAGTAATCACTGGTGTGATATTGTATGAACCATC  
ACTTGCAGGANACCAGCTTCACAAAGAAAGCTACAAGAANGTACATCAAGATTACTGAAGNCAATCA  
AGGGAACTTGAGAACAGAGACAGAAGAGAANACCTTTATGACAGGGNCTGCGAACAATCAGCCATCC  
TTGCTATTCAAACATCAGTCTTATGTGAAAAGTATNCAATGCATGGTGCTTGTGACTACGGAGAGGG  
35 GNACCCATATGATTT

>'000128a-048.scf' came from CONTIG 39 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-048.scf"(52>580)

40 GCACGAGGGTGCTTTGAGTTCCGTCTGCGGCCAAGGAGCTCGTCCCCACCTACCCCCACCCTCTTCCT  
CTCTCCTCCCAATCCCAGGCGTTCCCGACACTCTAGGCGTCAGGAGGCACGCCGACCAGCGTTCCGGC  
TGGGGAAGGGTGGCGAGCGGGACCGCCCGACGTTGGGGTTCTAGTGTGAGACGCAGGTGCGGTCGG  
TNTCAGGAATTAGGACATCGGCTGGGCTGAAACTCGCTGGGCATGCAGNNNNTGTCCCTCGNCCGCG  
GAGACTGGCTGTCTACGGAGCGAGGGACGTGCATGTACCCCGCCTCAGAAAGCGGCCNGCTGGCA  
GCCTCATGGAGGTGGNNTGTGAGCAGTGNGAATAACACGCCANAAAGCTAGCAGCTGGCGACAAAGT  
45 CAAATCCTCTGCGNNCCACCCACCCAGCATCAGCAACTACGCCAGGGACAGNGCCTGCCCATCTGNGT  
CTCGTCTCCGACCCCTCCCCCCCCCTCTCTGCTACTCCCGNGCCACGNATGTG

>'000128a-049.scf' came from CONTIG 40 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-049.scf"(48>538)

50 TTTCCTTGGAACTAAGAAGGACTTACCTGACATTGGCCTCATTCTGGCCTTCACTTGTTTCATAAGAATCA  
TGGAACCAGAGTTTGAGTTAAGAACTTGGAAAAAGCAGCTGAAAACATCTCAGAGTCCACTTAACA  
ATTTAAAAATTCCACTTAAGATGCTAAATAATCCATTGCTTATGTAGCAACTCAACGATGTTCTCAGGN  
TCCCCAGTTCTTTCTGTCTTTCCCTCTGNGATCCTTATTGTATGGGGCTTTGNNNNACGGNNTTCTCA  
GNGAGTACATATAGGCTGNTGCTGCNTCAGACATTTNCACTCTCTCAAGACTGGNAGTAGGNAGCAA  
55 AACCTTNGTCTTTTCACTCTCTGTTTTATTTGGAAGANAATCTCTTCTCAAAGTCTCTACATTTNCTTN

ATCTCATACATAGGATTTCCCTACAATCTGATCACAGGAGCTGAAACGACAGGANGGNAGTGATGCTG  
GTAGACCATG

>'000128a-050.scf' came from CONTIG 41 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
050.scf"(8>563)

GCGTTAACTAGGGTCCCCGGCGCGGGGTCTGCTTGCTTACAGGCTGGACGGACAGACCCAGGACGCCC  
CTTGCTCCAGCCTCCGACCACCTTCAACCTTTTTTCCAGTCGCAACCTTCGGAGTCAGCCACTCAGCT  
GTCCGCGATCACCGGGACCAGCCACCATTTTTTAATCTCTTATTATTACCGACCAATCATGAGCTGCCA  
GATTCGTCAGAATTATTTCTACGAGGTGGTAGGCGNNCGTCACCGCCTGGTTAACATGCATCTGCNNN  
NCTCTACACCTACCTCTCTCTGGGCTTCTATTTTCGACGCGACGATGTGGCCTGGAGGGTGGGGGTCACT  
TTTTCGCGAATGGNCCAGAGAAGCGCGAGGCCGGAACGCTCTTGAAACTGCAAACCAGCGGGCGGCC  
GGCCCTCTCTGGGAGGNCAAAACCATCTAGAGANGGGGTAAACCAGACCTAGGAGCCGCTCTCGAN  
AGAAAAGTGATANCTNTGGACGCAGGCTGGCTTGCCCGGAACCAATTGGACTCTGAAACATCTAATG  
GAAGAANCAAA

>'000128a-051.scf' came from CONTIG 42 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
051.scf"(1>671)

CCACCGTGTGGCGCCGCTCTATACTATGGATCCCCGGGCTGCAGGCTTCAGTGGCAGCCAGTGCAGGG  
GGTCAGGGATCATGGGGGAGAGCGCTCTGGAGTCGGGGCCTGCGCCCGAGCGCCGGCAGGGGGTCC  
GGTGACGCCGTACGGTGGCCACCCTGCTGGAGAAGCTGGCCACCATGCTGGAGACGCTGCGCGAG  
CGGCAGGGGGGCTGACTCAGATGCAGGGCGGGCTGGCGGGCTCCGTGCGCCGCATCCAGAGCAACC  
TGGGCGCGCTGAGACGCAGCCACGATACCACAGTTTTACGCTGGCGCAGCTGCTGGCCAAGGCGGA  
GCGCGTGGGCTCGCACGCGGATGCCGACCAGAACGCGCCGTGCGCCGCGCGCCAGAGCAGAGCTGG  
AGACACCACGACTGTGGTGCAGCGCGGTAGTCCACGTCTGCCTTAAGAGAAGCTGAATCCCACCAGCCT  
TCANAAGCGCGGACCCTAGCCCGGGAAGTGGCCAACTGCCGACCGACGAAAAGTCAACAGAGAGCCG  
GGAGCAGCCGAGCGAGGACCGGTGAGAAGACAAGTGCAGCCCTCAGCCAAGGCGCGCCACACAGCGT  
AGCCCCGCTGGCGCGAGNTGGCCGAGACACCTGGGCACGACAACCCCAACGGGACGGACGGGCGAG

>'000128a-052.scf' came from CONTIG 43 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
052.scf"(44>569)

AATTGGCACGAGCTCAGGGCACCAACGACTCACTGATGAGGCAGATGAGGGAGCTAGAGGACCGCTT  
TGCTAGTGAGGCCAGCGGCTACCAGGACAACATTGCCCGCTGGAGGAGGAGATCCGACACCTCAAG  
GATGAGATGGCCCGCCACCTGCGCGAGTACCAGGACCTGCTCAATGTGAAGATGGCGCTGGCACGTGC  
AGATTGCCACCTACCGGAAGCTGCTGGAGGGCGAGGAGAGCCGGATCAACCTNNNNNATCAGACCTT  
CTCTGCCCTCAACTTCGAGAAACAAGCCNCGACAGAGGGGGTCTGAAATCATACCAGAAGACGNGAT  
GATCAAGACATGAGACCGGNAGGNNAGTCCGAGTGAGGCAACACAGAGATGAGTGCTCTAAGCAG  
AGTTTTTGCTGCAANACGGCTCACTTGTCTACTGCTTAAGCANNCTCTCTTCAGCACACCCACCATGT  
TCCTCAACTTGACTGTTCCGACCCTTTGTCCCAGGAAAGACACTCAGCAGTACCC

>'000128a-053.scf' came from CONTIG 44 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
053.scf"(43>620)

ATTTGCGACGAGGGGAAGGTTTTCTGGCAGGTTGATTTTCAGTCAGCATGTGCGCTTCAATGAAGGA  
ATGCCTTCAGCTTCAGCTGCTGGAGATGGAATGCTGTTTTCTATGTTTCCTAACCAAGGAGAAGTAAA  
ACTTGAAGATGTCAATGCCCTGACGAACATAAAGAGATACTTGGACGGCATAAGGGAGGCCTTGCCA  
CCAAAAATCGAATTTGTGATCACCTGCAGATCGAGGAGCCCAAGGTGAAAATTTTCTTGCAAGTAAC  
CATGCCTCACAGCTACCCCTATGTAGACTACAGATGTGTGCACGGTCTGCAGAACTTGACAGACAGC  
AGCAGCTGCTTCTCAACAAAGGCCTCACTTCTACATCGGGACTGTTGATCCCAGGGAGCTCTGTGTGT  
GCGCGGCATNCAGAGTTACAGACAACAGGCCTCTACTTCTGACAGAAGCTGTGGACGAACATGAAC  
AGCAAGCCATCAGAACACTCTNCGATGTGACTACGCACATATTTTCAGAGACCTCGAAAGACTGAGNCG  
GAAGTNGACGACGAATTGAGAAGAAGCGGATACG

>'000128a-054.scf' came from CONTIG 45 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
054.scf"(39>53)

GGTCTGCAGTTGCTC



>'000128a-055.scf' came from CONTIG 46 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-055.scf"(10>290)  
CGTTAACTGGGTCCCCGGGCTCAGTTCCGCCCCCGCCCCACGCGCCCAAAAGGCTGGAGCCTCATCGC  
TCCATGTGTGGTATTTGGGGCTCTTTGGGGGAGATGACTGGCTTTTTGTTTGTGGGTGATGGGTTTAA  
5 TATTGCTCACAGGGGTCCGGGAGCATTTCTGTTTGAAGATGTTAATGGGTACACCAATTGCTGGTTTGG  
ATTCACCGGTTGGAGAGAAGATGACCAGCTGTGTGGTATGTCTGCCGATCCGAGAGAAAGAAATTAT  
NCTCCTT

>'000128a-057.scf' came from CONTIG 47 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-057.scf"(53>548)  
GCACGAGGCCAGTACACAGGTGTCGTGAAAACCAACCTAAAGCCAAAAGGGAAGGAGAAG  
ACCCACATCAACATCGTTGTCATTGGGCACGTAGATTCAGGGAAGTCTACACGACTGGCCATGTGAT  
CTACAAATGTGGCGGGATCGACAAGAGAACAATTGAAAAGTTTCGAGAAGGAGGCTGCCGAGATGGGA  
AAGGGCTCCTTCAAATATGCCTGGGTCTTGGACAACTTAAAGCTGANNTCTTGCGTGGTATCACCATT  
15 GATATCTCGCTGTGGAAATTTGAGACCAGCGAGTACTATGNTACCATCATTGATGCCCCCAGACACAG  
AGACTTCATCANAAACATGATTACAGGCACATCCCCAGCTGACTGTGCTGTCTGGATCGTGTGCTGG  
TGGTGGTGGATTGAAAGCCCGGATCTNCAGAAACGGCAGACCCGNGAGCATGCCCTTTTGGCTTTACA  
CCTGGTGNNGAANCACTANTG

>'000128a-056.scf' came from CONTIG 47 at offset 20;"E:\SEQUENCE\export\EST\_db\000128a\000128a-056.scf"(77>499)  
TGTTGTGGAAACCACCGCTTAACCTAAGCCAAAATGGGAAAGGAGAAGACCCACATTAACATCGGTG  
TCATTGGGCACGTAGATTCAGGGAATCTACACGACTGGCCATCTGATCTACAAATGTGGCGGGGAT  
CGACAAGAGAACAATGAAAAGGTCGAGAAGGGAGCTGCCGAGATGGGAAAGGCTCTTTAAATGCTGG  
25 TCTGACAACTTAAGTTTTTGACGGGGTCACATGATTCTCCTGGGAATTGAACAGAGTATATGTACTATG  
AGCCAAGAACAACATCAAACTGTTCCGGCTCCAGTGATGGCTGCGATGGTGTGGTTGGATTGAGCG  
ATTTCAACGCAACCGACTGCCTTGTTACTGGGGAATATGGGGTACAAGATCCTACCCTANCAAAAAC  
AATGTGAAACCTTTAA

>'000128a-058.scf' came from CONTIG 48 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-058.scf"(9>565)  
GCGTTAACTAGGGATCCCCGGGCTGAGTATTCGGCACGAGGGATCCCACAAGAGGCTGGACCCTAG  
ACATACTCTTGTTGAATAACGCACACATGGTGTATAACTAGCACGCACGTAAAACATCCGTTTTACGT  
AGCCACAGGAGGGGGAAACCATATAGATGAAAACACTGAGTCTGAGACGTGGACATCCCAGAAGTGT  
35 ATAACTAACTTACCTGAGTATAGGAAGAACCCTCTGATATCCGTGAGCAAGACAAGGAAAAAGAAG  
AATTCTGAATATATGGGAAAGCCAGCGCTATAGGGAGAGCAACAAGGACCATGAGAGCCAGATATAT  
GATGGGGAATAGAGAGGACACACGAGGATAACATACACATAGAGAAAGCTATCAACGGGGAAAAAT  
AAGCGATGAGACACTCATGGTGGACTGAACGGCCGGCATAGGGAGGCAACGATAGTATACGAGGGAA  
ACGAACAATATGACGCAATAAACGAGTAGAAAATGGGAGCTACACAGTGTTTAGGAGGAGCTATGGA  
40 CAAACGGGTTTTAAATTCCGG

>'000128a-059.scf' came from CONTIG 49 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-059.scf"(40>518)  
GTCTGCTATTCGGCACGAGGGTTTACCAGCTTAGAGGTCTTGACCAATTGAAGAAGACACTATTCTT  
45 GTCATAGATCCAAATAATGCTGCAGTACTCCAGTCCAGTGGAATAAATCTGTTTTACTTGCCACATGG  
CTTGAGTATAGATAAAGATGGAAAGTATTGGGTCACAGACGTGGCGCTTCATGAGGTGGTCAAACCTAG  
ATGCAAAGAGTAAAGAAGGCCCTCTGCTAACCTGAGAAGGAGCATGCAACCAGGCAGTTTTCTAGA  
AACACTTCTGTGCAGCCCACCGATGTGGCTGNGGGACCAGACACCGGAACCATCTATGTGTGAGATGA  
CTACTGCAACAGTCGCCTTGTGCAGAGTTCACCAAGTGAATAATTCATCACACAGTGGGGAGAAGCGT  
50 CTTAGAAAACAANCCTATACAGACCCAGTCAGAGTTCTCACAACCTGCCCTGTNGCCTCCCTGGCCAC  
TGGG

>'000128a-060.scf' came from CONTIG 50 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-060.scf"(45>469)  
TTCCAATGAATATTCAGGACTGATTTCTTTAGGATTGACTGGTTGGATCTCCTTGCACTCTAGGAGGT  
55 ATTACTTACATATTGTAATAATTTACCCCTGTAAAGTATACAATTCAGTGGGTCTTTATATACTCACAGT

TATATTTAATAACACTAATCTCAGAAATTTTCATCACCCCCAAAAGAAGTCACATACACATTAGCAGTC  
 ACTTCCCATTTCATTTCCTNCCATCTCCAAGCAGCCACTATACTAGTNNNNACTATGATTTGTCTACTTT  
 GGACATTTAACTATATGAATTCTACAATATGGGCTTTTGTGACCATTNNCTTTACTTTACAAATATTGA  
 TATTGTGCAGGGCAGGGGCATACTCATTCTCCTCTGTTCTTAGTAGATGGNGAGAGAGAAAGAAAAAA  
 5 AAAAAATGTAAA

>'000128a-063.scf' came from CONTIG 51 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
 063.scf"(49>634)

CGCTGACTATTCTCAACCAACCATAAAGATATTGGTACCCTTTATCTACTATTTGGTGCTTGGGCCGGT  
 10 ATAGTAGGAACAGCTCTAAGCCTTCTAATTCGCGCTGAATTAGGCCAACCCGGAACCTCTGCTCGGAGA  
 CGACCAAATCTACAACGTAGTTGTAACCGCACACGCATTTGTAATAATCTTCTTCATAGTAATACCAAT  
 CATAATTGGAGGATTTCGGTAACCTGACTTGTTCCTTAATATTGGTGCTNNNTATAGCATTGCCCGAAT  
 AAATATATAAGCTCTGACTCTCCCTCCTCATTCTACTACTCTGCATCTCTATAGTGAGCTGGGCAGGAC  
 AGCTGACCCGGTACCTCCTTACAGCAACTAACCTGCAGAGCTAGAAGACTAACATTTCTCTTAACTAA  
 15 AGAGATCTCATTTAGAGCACACTTATACACATATAAAAAGACCCGCAGGACATACAACCTTGTGTGAA  
 CGATATACGCGACATATACTTCTCTGTTTAAAGGCTACAAGTTTAAACGAACAAAACCTTTGACGGGAG  
 AGGACTTTTAACTTTTGTGTTGCCCGAGTTTATTTCG

>'000128a-064.scf' came from CONTIG 52 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
 064.scf"(54>595)

GCACGAGGGGGATCTACACTCGAGTCAAGAACTACGTTGACTGGATAAGGAAGACAATGCAGGAGTA  
 TAGTGCCCCAGTGTAGACTAACCATAACAGGTCCCACCAGCCTCTAAGGGCTGTGACCCCTCTGGA  
 CTTTCTCTTCTCACAATAGTTCCATTATTTACCATGACTGAGAGAGGACACGGGAGTGAGATTGAGC  
 TAGTGCCAGGACTTGGATGTCGGGACACTGGGTGGAGGTAGGGTGTNTCTCTGTGGCTGTGTTGGT  
 25 CTTTCAGTATAGATGGACTAACTACATGGGGTCTCTCCCCGAGTCCATCCTGTGGACTTCAGTGTGC  
 AAGGGAACCCCTCTCTTCTCTATTCTATTCATGGGTGNNNAGGGTCTCTCTCTGGATGACCCACTCCTGTTA  
 CAGATCTGACTCTGAAATTTGCTGTGGGGCATTCTCTTGATTTTNTTGGGTNCCCTTTACCGTTGAAGT  
 TGACCACACGTTCTGCTACTACTGTAATAAGCATGTTATAACCCAAAAAANAANAACCTGGA

>'000128a-065.scf' came from CONTIG 53 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
 065.scf"(50>578)

GCACGAGGTGAAACCTTAAATCCCACAACATTTATTATAAAGGTGCTGTAAAGGGAAACGCTGGGCTT  
 CATGACGGGCTTATCGGTAGGATTTCTGGTAGCGGGCAGGGCACCAGGACCTCCAAACTTCTTGAT  
 TCGCAGCGACGGGGATCGGCTACCAGCAGGGTCCGGTCATACTGGATGAGGATGTCTTTGATCTCCTT  
 35 CTTGGAAGCCTCATCCACATATTTGTGGTAATAGGCCACCAAGGCTNATTAGATGGACTGGCGGATGG  
 CGTAAATCTGGGCGACGAGACCACACCTTCACTCGGACGCGGATGTCCACACCAGCAAATCGCTCC  
 TTGCCNAGAGCAGAACAGGTNCCAGTAGCTTGATGCAGCGTGCAGCGGTTGATCATTTCTCAGGGTC  
 GTGCGTTACCTGATGAGGNCGNTACCTCGTTTGCAGTGCGCCAGGCTGTGGCCGNCTTCTTACGNCC  
 GAGACTTGCACGACTGCAGAGGCCCTTTGGACGCATGGCTCAGGCGCAGAACG

>'000128a-066.scf' came from CONTIG 54 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
 066.scf"(50>515)

CCGGGGACGAGGGCCTGACCCACTNACAAACGTGTGCTAGACTACCCGAGGGACCTTGAAAGCCAA  
 AGCTCGGTCCCCGGTAGCGTCGAAGGCTACGAATCTTGTCCGCACCAACGCCGACCTGAGGGGGGAG  
 45 GGGCTGCAGCCAGGAAGACAGAGCGGAAAGAACAAAGGAGGGCGAGGAAAAACAGGCGAAGCACAA  
 AGAAAAAACAATAAACAGCGCAGTCGGAGGAGGCACACGTGTGGATGGGATGAGCTCTTCTATGA  
 GAAGGACAGCGCCGGTGCAGCCAGACCTGAATGCGAGGAGGAGGAAGAGACAGAAGTGGGAGAGGA  
 GCAGGAGTAGGCGGCAGATTGGACCTAGCACAGCTACAGAGAATGATGGCTGGGGGGGAGAAGAGGCT  
 GGATAGAGCGCGGGTAGATATGACACAAAAAGATGACGAGAACGCGCTGAGAACACGGGAGCAGAG  
 50 A

>'000128a-067.scf' came from CONTIG 55 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-  
 067.scf"(9>545)

CCGTTAAACTAGGGATCCCCGGGCTGCAGGCAGAGACGGGCGCCGTCCCATCTCGGCCTCTGGGTAAC  
 55 TTCTGCTTGACTGACCGACCGTGACCCTGACATAGCGTCATATTCATGGCAGCCAAGGGAGGCACTGT  
 CAAAGCCGCTTCAGGCTTCAACGCTGCCGAAGATGCCAGACCTGAGGAAGGCCATGAAAGGGCTT





>'000128a-078.scf' came from CONTIG 66 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-078.scf"(49>560)

TTATTTTCGGCACGAGGATCATTGATGCCCCAGGACACAGAGACTTCATCAAAAACATGATTACAGGCA  
CATCCCAGGCTGACTGTGCTGTCTGATCGTTGCTGCTGGTGTGGTGAATTTGAAGCCGGTATCTCCA  
5 AGAACGGGCAGACCCGTGAGCATGCCCTTTTGGCTTACACCCTGNGTGTGAAACAATAATTGTTGGC  
GTTAACAAAATGGATTCCACTGAGCCACCCTATAGCCAGAAGAGATACGNTTNAATGGTTAGGGAAGT  
CAGCACCTATATTAAGAAAATTGGCTACAAACCCGACACAGTAGCATTTGTGCCAATTTCTGGCTGGA  
ATGATNGACACATGCTAGAACCAGTGCTATATGCCATGTTTCAAGGATGGAAGTCACCCGTAGGGACGC  
10 ATGCCAGGGAACCACTGCNTGAGCTCTGATGCATCTGCACCACTCGCCACTGACAACCTGCGTGCTC  
TCAGAGCTATAATGGGGATGTACGCCTGGGNCGGG

>'000128a-080.scf' came from CONTIG 67 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-080.scf"(46>302)

15 TGTATTTCGGCACGAGGTAAGTGTAAATCGGCAGAAACAACAGCAACATCTTTGACCTGAACCGGAATT  
TCCCGGACCAGTTCGTTTCAATCAGATCAGAGCCCAACCAACCAGAACTATGGCTGAGATGAGCTGGATG  
AAGACCTATCCATTTGTGCTGGCAGCAAACCTGGATGGAGGGACTTTGGAGGGTAACCTACCTTGTGA  
GATGATGAACAAGGCAGTGCCACATATAGGAAATGACCAGATGATGCTGTCT

>'000128a-081.scf' came from CONTIG 68 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-081.scf"(51>540)

20 GGAGATGAACCGATAGATTTCAAAATCAACACCGATGAGATTATGACCTCACTCAAATCAGTCAATGG  
ACAAATAGAAAGCCTCATTAGTCTGATGGTTCCCGTAAAAACCTGCACGGAACCTGCAGGGACCTGA  
AATTCTGCCATCCTGAACTCCAGAGTGGAGAATATTGNGTTGATCCTAACCAAGGTTGCAAATTGGAT  
25 GCTATTAAAGTCTACTGTAACATGGAACTGNGGAAACGTGCATAAGNNTNAGTCCTTTGACTATCCC  
ACAGAAGAACTGGTGGACAGATTCTGGTGCTGAGAAGAACATGTTTGGTTTGGAGAAATCATGAGGT  
GGNTTTCAGTTNAGCTATGGGCATCTGAACTTCCGAAGACGTCTCGATGTCAGCTGGCATCCTNCGACT  
TTCTNCAGCCGGCTCTCAAACATCAATATCACTGCAGAATACATGCTACTGGATCATGCAGGGNAATG  
TAAGAAGCTGAAGT

30 >'000128a-092.scf' came from CONTIG 68 at offset 441;"E:\SEQUENCE\export\EST\_db\000128a\000128a-092.scf"(63>428)

GCTTATAAAGCCATAAACATAGGATACAAGAAGCTGAAGTTGCGGCGGGTAGGTAAGAAAAAATGAA  
AGGAGAAGAACAGGACGGACACGGGCAGGAGGAAAGGACCAGGGGGAAGGGCGGGAGAGGGGGAC  
35 AGAGGAAGGAGGGCGGAGGGGGGGGGGCTGGAGGAGAGGAGGAGGGAGAGAGGGAGAGAAAAAG  
AGAGACGAAGAGAAAAACAGAGGAAGGCAGAGAGGAGACAGAGAGGGACGCGAAGATAGGAGAAG  
CAAAGGCTAAGTGGCTAGAAGAATGGAAGCAAACAAAGAGACACACGACAAGAAAACCAACCGCA  
CGCTACTAAAAAGAATGGAAGAAAAAGAAGACAAATTGT

40 >'000128a-082.scf' came from CONTIG 69 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-082.scf"(53>345)

TCGGACCCGTGTGCGAACCTGACCGGACAAGAAGACGGAGCATCGGTGAGATGTGTACACGGCGTCA  
CTGGCATGGGTGCCGTGGCATGTGTCACCATATGAGCACCACGCCTGGATGGCACCCTGGGCACCGC  
GGCTTGGCACACCACAAGGGCCCTCGCCGCTGAGATGGACGANAGGAGGTGGAGTAGCAGAGACGTA  
45 TACAGCAGGGCGGAACAAGCAGGGACAGTATGATAGGGAGTACATCACTGTGGTGACATTGCATCAT  
GGGATACTCATCATGATGCTGCCA

>'000128a-083.scf' came from CONTIG 70 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-083.scf"(51>541)

50 CGGGCGGCGCCTGGCCCCGGGCAGTGACGCGGGCGCTGGCGCTGGCCCTGGTGCTGGCCCTGCTGGTC  
GGACTGTTTCTGAGCGCCTGACCGGCGCGATCCCGACCCGAGGGGCCAACGGGGACGGGGGATGC  
CGGTTCCGCCCCGCTACCGCTGTGCTGCTGATCCTGGACCCCGAGACGGGCCAGCTGCGCCTGGAG  
GATGGGCGCCACCTGACGCCGAGCCTGAGGCCAACCTTACGAACGTTCCACGCGAGAGCGGGAGG  
GCCTTTGTGGAGCTGCACACGAACGGGCGCTTGAATGACAGACTGCAGGCCTACGCCGAGGCGAGA  
AGGAGGCTGCTGAGTGCGGAGAGCTGATCTACATGTACTGGATGAACACGATGGAGAATTAAGTGGC  
55 ACCCTTCGAGTATGAAGGGGTATACTGTGAGATGCTCAAGAACTTGCTAGAGGGCAACCTGTAGTGGA  
TGCAGAAAGATATGGAGCT

000128a-084.scf  
000128a-085.scf  
000128a-087.scf  
000128a-088.scf  
000128a-090.scf  
000128a-091.scf  
000128a-093.scf

>'000128a-084.scf' came from CONTIG 71 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-084.scf"(47>645)

5 CTGGTCCCCCAGGTCCTCCAGCGGGCTACGACTTGAGCTTCCTGCCCCAGCCACCTCAAGAGAAG  
GCTCACGATGGTGGCCGCTACTACCGGGCTGATGATGCCAATGTGGTCCGTGACCGTGACCTCGAGGT  
GGACACCACCCTCAAGAGCCTGTGCCAGCAGATCGAGAACATCCGGAGCCCTGAAGGCAGCCGCAAG  
AACCCCGCCCGCACCTGCCGTGACCTCAAGATGTGCCACTCTGACTGNTNTAGCGGAGAATACTGGAT  
TGACCCCAACCAAGGCTGCAACCTGGATGCCATTAAGGTCTTCTGCAACATGGAAACCGGAGAGACCT  
10 GTGTATACCCCACTCAGCCAGCGTGACCCAGAAGAACTGGTATATCAGCAAGAACCCAGGAATAG  
AGCACGTCTGGTACGCGAGAGCATGACCGGCGATTNCATTTCGAGTATGGCGGCAGGGTNCGATCTGNC  
GATGGGNCATCCACTGACTTTCTGCGCCTGAGTNCACGAGGCCNCCANAACATCACTACATGCAGAAC  
AGNGGNCTAACTGACCACAATGGCACTCAGAAGCCTGTNCTCAGGCTCANGGATAGA

15 >'000128a-085.scf' came from CONTIG 72 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-085.scf"(304>310)  
CAAGCAG

20 >'000128a-087.scf' came from CONTIG 73 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-087.scf"(293>298)  
AAACAC

>'000128a-088.scf' came from CONTIG 74 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-088.scf"(302>308)  
CAANGNG

25 >'000128a-090.scf' came from CONTIG 75 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-090.scf"(56>598)  
GCACGAGGTCTCCACGTACGGTCAGTTCTACGGTGGTGACAGCTACATCATTCTGTACAACTACCGCC  
30 ACGGCGGCCGTACGGACAGATCATCTACAACCTGGCAGGGCGCCAGTCCACCCAGGATGAGGACGC  
TGCCTCGGCCATCCTGACCGCTCAGCTGGACGAGGGAGGCTGGGAGGGGACTCCCGAGCAGAGCCGA  
GAGGGCCAAGGCAAGGAGCCCGGTACCTCATGAGCCTGAGTTCTCGGAAACCCATGATCATGTACA  
GGGGCGGCACCTGCCGCGAGGGAGGGCAGACGGCGCCGCGCCAGCACCGGCCTGGTCCAGGGCCGGG  
CCAGCAGCTCTGGAGCCACCCGAGCCGTGGAGGTGATGGCCAAGGCTGCGCGCTGATTCCAACGATGC  
35 CTTTGACCTGAGACCCCTCGGCGCCTACTGTGGTGGGTGCGGAGCAGCGAGCAGAAAGATGTGCCTGG  
ACTGTCACTGGCTCGGCCAACCGGCGGTGCAGAGGCAGAGCCAAGCTTTGGAGCCTGTGGGAGGCC  
TCCG

40 >'000128a-091.scf' came from CONTIG 76 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-091.scf"(80>368)  
CATTACATATTGTGACTGCTACTGTTATAATGATCCACGATCACTACGAGCACGAATGTTACGACGCTG  
TTACACGATGAAAGTGGGTGGGCAGTGGCATGGATAATGGCGTCACACGAAGTAATAATAATAGCAG  
AAACTGGCATAAAAGAAATCAATGGCACACACACAACGGCGGAAGGACAACCTGCCAAGACAGAACC  
GCAAATGTAGCTACATTGGCTGCTGTAGTGTGGAAGGAGGAGGGAGCGAGGAAAGGGAGAGGGCGA  
45 GCGTGCATGGACGAGTGGGG

>'000128a-093.scf' came from CONTIG 77 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-093.scf"(52>500)  
TTTTCGTTTAGAGTTGTTTATGCTTTATATGCAACTCTCTTATGATTGCACAAATCCTAACTAAAAATTCT  
AGATAGATAAAGCTTCGTGGGGCTAGGTAAGAAATTATGCCAAGCTGGAGAACAGCCAGGCCCGGGA  
50 GAAAGGAACGACACCGCTTAGGCCGGAAGGAGACAGAGGACGAGGCCGAAGGGGGACAAGCTAGG  
AAGACCAGAAGAAAGACAGACAGGGACAAAAAAGAAAGCCAACAAAAAACACATGAAAAAAG  
GCAGGTGACAAAGAACGACGCGATTATTTGAGAATCAAAGGCTACTATTGTTTTTAACACTAAAAGTA  
AAAAACGACGTAGCGGCGATAAGAAAAACCCCGGCAAGCTTCTAAAAAAGAGTGGGAAGAAAAA  
55 GCAAAGTGCAAGAAACGGAATCAAAGCTAAATGAAAGGCCACTCC

>'000128a-094.scf' came from CONTIG 78 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-094.scf"(1>358)  
 CTCAGGGGCGGCGTCTAACTAGGTCCCGGCGCAGCCTCTGGCTGGTTCCCTACACGACCTTCCCCTA  
 GCATCTCCAGACCATCCATTGAGCGTCGTACATGACGACACTAAGGACACCTTGAAGCAACAGGAAA  
 5 GAGAACAGAGGGGGAAAGAAGAGAGGGAACCAATAGAAGTGGGGAAAGGAGGAGGAAGGACCAAG  
 GGAACGGCAGGACAAAGGACGAAGTTCTAGAAAAGGAAAAAGGAAAAAGAGAAAGGAGACCA  
 AGAAAAAGAAGAAAGGCAATAACAAGTAAAAGAACACGATGGGGAGGAAGGGGAGAAACGCA  
 CACATAGCGGCAGGCGGGACCGGGGAAA

10 >'000128a-095.scf' came from CONTIG 79 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-095.scf"(53>524)  
 CGGTCTGGGGCTGGTGTTCAGCGCCACATACCTTAGCACCAGATGGACAGCTCCACAGCCCAGAGTC  
 TCCTCTGTGGCCTGAGCTACACCTCTGCCGGCTCCCTCAGCCGCCACCTCTTGATCGGCCACAAGGTGA  
 GAGACCAGGAGGAGGAAGAGGCGAGGCGGCAGAGCCAGAGGAGGGGCTGGGGGAGGAGGTGCCC  
 15 ATGGGGACCAAGGAGAACGGAAGTGAAGAAAGTGCCGAGGTCTCCAGTGTGAGGCGACTCCGAGACG  
 AAGAGATCTCTGAGCCTGGCCCAGGATGAGGATGGAGCAGAGATGCTCCTAAACGACCACAGACCT  
 GTCAGGACCGGGACAGCCACACACCGAGACCCGAGTGTGACCAGAGGCCCTGCAAGGCATGGGGCG  
 GGTGGACGCGGGNCGACGCGCGCTGCTGTGGGGACAAGGGAAANAACAGCCCACCAGGGNGAGTG  
 GCG

20 >'000128a-096.scf' came from CONTIG 80 at offset 0;"E:\SEQUENCE\export\EST\_db\000128a\000128a-096.scf"(42>393)  
 GGTCTGCATGCGGTTTTTTTTGTGGTTTTCTGGCGTCAGACGTTATATGTTAGTGGTGTGGGACTTTAC  
 TAGTTCTAGACTGATATACGATCCTGTATGGTGTGCGGTGTGCTTTAAATGAACACACAAAAGACAT  
 25 AATGGAGAAGAGGAAAAGAGGAGGAAAAGGAGAGAAGAACGAAAAAGAGGGAGCGGAGTGGAGAGG  
 AAGGGAGGGGGAGGAAGAAAGAAAAAGGGGAGGGAAGAGAGAAGGGGAGGTCTGGGGAGGAGAAA  
 GGGAGAAGGAGGAAGGGAGAGGAGAAGAGAAGAGTGAGATAAAAAGGACAGACAAGAGAACAG  
 AAGAGAACAGAAGGAGAGA

30 >'000203a-001.scf' came from CONTIG 1 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-001.scf"(45>465)  
 GCACGAGGCTGTTTTATATTCGCCCATTCAGTCCATTTTAATTCTCTGATTCCCTAATATGTTGATGTT  
 ACTCTTGCCATCTCCTGTTTGACCACTTTCAATTTGCCCTTGATTGATGACCTAACATTCCAGGTTCTG  
 TGCAATATTGCTCTTTTTATCATCAAACCTTTACTTCTATCACTAATTACATCCATAACTGGGTGGTGT  
 35 TTTGCTTTGTTTTCTTCTCTCTTTTGGAGTATTTTCCACTGATCTTCATTAACATATGGGGCAC  
 CTACCGACCTGGGGGGGTGATCTTTTCATGTCTTTCTTTTGGCTTTTATTCTGTTATGGGGTTTCAAGC  
 AAGATATGAAGAGTTTGCTTTTCTTTTCCGGGACACGTTTGTGAGATCACACAGACTGCCGCTGGGGT  
 G

40 >'000203a-002.scf' came from CONTIG 2 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-002.scf"(48>297)  
 GCACGAGGGATTCTTATACTTTCTGAGGGAGTTAATGACCACTAGAGCTTGTCTCATATTTTTTTCA  
 GCTTAATACTGTATGTCTCGTAAGATGGGCCTTATTGCCTGTATTCTTTGATATGTGATTAAGCCTATA  
 GCTTTCAGTGACCAAACATTTTACAGAGTAAAAATGTTAGGAAGCAGAAAAAGAAAATCTGATTTAT  
 45 TCTATGTCTCATTTATCCAGCCCTGCACTTAGATAGAAAGTGTGC

>'000203a-003.scf' came from CONTIG 3 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-003.scf"(40>551)  
 TTTTGACAGAGAACATTTTTCTCACATACACTTTCAGAGTCAAAGCTGTGGATGGGGGAGATCCCCC  
 50 AGATCTGCAACAGCCACGGTCTCTCTTTGTGATGGATGAGAATGACAATGCTCCCACTGTCACCCCT  
 CCCAGAAATATTTCTACACTTTACTGCCACCTTCGAGTAACGTCAGGACAGTAGTAGCTACGGGGTT  
 GGCAACAGACAGTGATGATGGCATCAATGCAGACCTTAACTACAGCNATGGGGGAGGGAATTCCTTC  
 AAGCTGTTTGAGATTGATTACCAAGTGGGNGGGTTTTCTTAAAGGAAACTACCCAAAGCATTATGGC  
 TTGCACAGGNTGGTGTGCCAGNGATGACAGGGGCAGCTTCCCATCTACACGATCTGTGCTGTGTTGTC  
 55 ATGAAAGGTTCTAAGCACTGGATGACTCCCAAAGCAAACTGCCNCCCCATCACCAGAATATACGGG  
 ACCAGCTATAATTACACAAAATAATGTTTGGGGGGGG



>'000203a-004.scf' came from CONTIG 4 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-004.scf"(43>365)

GCACGAGGGCCCTTTGACGTTCCGGCCGCGCGCCCCGCGCCTCGTCGCTATGCCTCGCAAAATTGAGG  
 5 AAATCAAGGACTTTCTGCTCACAGCCCCGCGCAAGGACGCCAAGTCCGTCAAGATCAAGAAAAATAA  
 GGATAATGTGAAGTTTAAAGTTCGATGCAGCAGATACCTTTACACCTTGGTCATCACAGACAAAGAGA  
 AGGCAGAGAAGCTGAAGCAGTCCCTGCCCCCGGTTNGNNNCGTGAAGGAGCTGAAATGAACACGC  
 ATGCTGCTTTGAACTGTATTAAATTTTTTAAATTCTCAAAAAAAAAAAAAAAAAA

>'000203a-005.scf' came from CONTIG 5 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-005.scf"(45>563)

GCACGAGGCCAAGAATACAGTCACCTGCAGCCGGGGGACCACCTGACTGACATCACCTTAAAGGTGG  
 CAGGTAGGATCCATGCCAAAAGAGCTTCTGGAGGAAAGCTCATCTTCTATGACCTTCGAGGAGAGGGG  
 GTCAAGNTGCAAGTCATGGCCAATTCCACGAATTACAAATCTGAAGAAGAATTTATTCGTATTAAACA  
 15 CAAACTGCGCCGNNAGACATAATTGGAGTCCAGGCANTCCCTGGAACCAANAAGNCGAGCNT  
 AGCGTCATCCCCTATGAAATCACACTGCTGTCTCCTTGCTGCACATGTTACCTCATCTTCACCTTCGCC  
 TCAAAGACAAGGAACACCGTATCGTCAGAGATACTTGGACTTGATTCTGATGACTTGTGAGCAGAAGT  
 TTATCTCCGCTCTNATAATCACGTTTTATNAAGTCTTGNTGAATGGNNATTCTAAAATGTAACCTCAT  
 GAGAACATCATCCAGGGNAGCTGTGCTAGCTTTACACTACAA

>'000203a-006.scf' came from CONTIG 6 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-006.scf"(47>562)

GCACGAGGGTTTAATTAGTGTACAAGGAGGCTTCAAGAGGGCTTCTGTGGTGACCCCGTGGTAAAGCA  
 TCTGCCTACCAAGTGCAGGAGACTCCAGTTCAGTCTGGTCTGGGAAGATGCCACACACCCGGGGGAAAC  
 25 TGAGCCCATGTACCACAACTGCTGAGCCTGTGTTCTAGAATCCGGGGGAGCTGGCACGAGAAGTCACAG  
 CAATGAGAAGCCCCACACTACTANAGAGTAGCCACACTCACCACACAAGGCTTNCCTTGTGCTCAGT  
 TGTTAGGAATCTGCCTGCATGGCGGAGACCTGGGTGCTGATTCTGGTTCGGAAGATCCCTGGAGAAGGAA  
 AGCTACCTGCCGAGCCACAGGAAGACCCACCTGACAGTCTGTGAAGAAGTGAAGAGCAGGGATAAA  
 CTAGGATCCTTGATTGTCAACTCTATCAAACAAACTCTTCTGTTTGTGTTGCTTCACACTTCTGCGTGCA  
 30 AGCTTCCGCCCCCTTTNAAATAATAATTTATTATATT

>'000203a-007.scf' came from CONTIG 7 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-007.scf"(32>465)

GCTGCAGGAATTTCGGCACGAGGCTAGTTTCTGTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTGCCTTTTC  
 35 TTCCACTTTATTTTCATATTCCCACCACAATAATGACTCCTTTAATTTAACTAAAAACCATANAGGGTT  
 CCCTGAAATTGTGGCAGCAAAGGAATGAAAGTGTCAAATACCGAGGGACAGGTGGGGTGGGGAATCA  
 CCGAATCGTCTCACTGGGCTCTTGAAGTTGCTGGCGGCTGAAGCTGCAGCTGGTAGGGCATTGATGGT  
 ATCTGAAACCGAAAGCCTGGGCCAACCTGGTGGCGGCCCTTGCCGGTACTGGGGTGCACATGAAA  
 ACATTGAAGGACCCGCGCCGAGAAGCGCCTCCGGGGGGGGGCTGTTGATTGGGGGTACACCCCTCC  
 40 CCTGGGAAAAAATTTCCATGGCT

>'000203a-008.scf' came from CONTIG 8 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-008.scf"(39>747)

CAAAATGTCTTGAAATGATATTACCATAATTTAAGTAGGAAAGTTACCTGAACACTTCTGCTTCCACT  
 45 TAACTGACTGGCCCGCAATATTGTAGGAACAGCATGTCCCTTGTACTGTGGTATTCAGAACAGCCACA  
 GCACTCACTTTTTCCAAATGATTCTAGTAATTGCCTAGAAATATCTTTTTCTTACCTGTTATTTATTAAT  
 TTTTCCCATATTTTATATGGAAAAAAATTTGATTGAAGATACTTAGTATGCAGTTGATAAGAGGA  
 ATCTGTTCTAATTATGTTTGGTGGATTATTTTATACTGTATGTGCCAAAGCTTTACTACTGTGGAAGA  
 CAACTGTTTAAATAAAGAATTACTTCCCAAAAAAAAAAAAAAAAAAAAAAAAAAATACCGGAGGGGGGCC  
 50 CGGTCCCCATCGTCCTATGGGAGCGTTACCATCCAGGCGCGCTTACAGCNCGGACGGGAACCCGC  
 CGTCCCCACCTACGCTGCACCCACCCCTTCCCGTGGGTAAAGGAAAAACCCACCGCCTCCACGT  
 GCGCACCGAGGCGAGGAAAGAAGGGTAATTTGTAATCGTAATTTTATATATTTTACATGCCAAGCC  
 ATCCTTAAAAAAAAAAGAAGGGGGGGTGTGTAATACTTAAAGCCCCCGAGAAAAACCTAGGGC  
 CCCCCCCCCCTTTTGGGGGCGAC



>'000203a-009.scf' came from CONTIG 9 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-009.scf"(37>606)

TAATTCGGCAGGAGGCTCATTTTCCATCTCTTATGAGGACACACATCACTGAATTTAGGTTCTACCCT  
AAGTCCAGAATAATCTCATCTTGAGATCCTGAAACTTATCACATTTGCAAAATTCAAGAGCCAGGGAA  
5 AGCTGAGCAGTGAAGTGAACAGGGTTTGGCTTCGAGGGTGATGAGAGTGTTCAGGGGTAGAC  
AGGGATGCTGTTTGTACGACTCAGTGAATATACTAAACCCNAGGGATTGCATGCTTTAAAGAAGAAG  
CTTAATGTTTGTGAAATTAGTCTCAATATAGCTGTTATTTTTAAAGAGCCTGGCTCGGGGAGCCATCA  
ATCATACTGCTATTTTATATCGATGTGCCAGCAGAAGTATTCTTAAATCTTTATGACACTGTTTTACTT  
TTGGCTGTCTCCACCTGGTTTAAATACATTGAACAGAACCCAGNGAAAGCCTATGGTACAGGGAGAG  
10 CCCCCTTTGCCATGAGGGATAGAATTGGTGATGCCAGAGATTCCAAGAATTTGTGAAAAACCAGACT  
CCGGGGCCGGGTAACCTTCTCCG

>'000203a-010.scf' came from CONTIG 10 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-010.scf"(44>427)

GCACGAGGAGAGAACTAGTCTCGAGTTTTTTTTTTTTTTTAACTGAAGGAAAATTTCTTTACAATG  
CTGTGTTGGTTTCTGTACATACCAACGTGAATCAATCATAATTATATTATATATCCTGATGGCACATGTT  
AAGAATGCATTTTCTCGTTTGAACATTACTGAGTTGGGAGATATGCAGGTTATGGATTAGTCTCTCTTG  
TGACTACTGACTTAACTAAAATTGAGAAGATACAGCCATTTACCTACAGTCCTCCAGTTAAAACATGG  
CAGACCTGAGCCTANAACCCAGTTTGGCTATTTTCACTCCAGTATCACCCAACTATACCTAAAATGTTT  
20 CCTCTGCAGATACTATTCAAAGCACTTTATTTATTTCTAT

>'000203a-011.scf' came from CONTIG 11 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-011.scf"(31>278)

CTGCAGAAATTGACACGAGCACCTCTCAAGACCGAGCTGCTGCGGCCACACTCCTACAGTCTGTGCAA  
25 GCCCCGAGTTTCAACCCCAAGTCTGGAGGGAAGAACCATGTCTGTGACCAGCAACTGCAAGAGCCA  
ATGCCTGTGTGTTGACAGCCGGCGTGAGATCTCATAGCTACTCTTGCCACTGCCCCGACAGCTCCCTG  
GCTCAAAAATTACCCTCATCTACTTGATAAGGATGATGTACACC

>'000203a-012.scf' came from CONTIG 12 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-012.scf"(1>719)

TGATGCCTTCTAATTATGGTTCCCCGGGCTGCTGGTGAGACCTGTGTATACCCCACTTTGCCCTGTGT  
GGTTCCAGAAGAACTGGTATATCAGTAAGAACCCCAAGGAAAAGATGGCTCGTCTGGTACGGAGAGA  
GCATGACCGTCGGATTTTCAGTTCGAGTATGGCGGCCAGGGGTCCGATCCTGCCGATGTGGCCATCCAG  
CTGACTTTCTGCGCTGATGTTACCGAGGGTCTTCCATAACATCACCTACCACTGCAAGAACAAGA  
35 GTGGCCTACATGGGACCAACTGACTGGCAACCTCAAGATGCCCTGCTCCTCCAGGGCTCCAACGAAG  
TACGAAATCCGGGCCGAGGACAACAGCCGCTCCACTACAGCGACACCTAAAATGGCTGCACGATCAC  
ACCGGACCTGGGCAAGAAGAGACGAATACAAACACCAAACTCCGCTGCCACATGATGGCCCCCTTG  
AAGTGGCGCCCATACAGAATTTCGTTTCGAGTGGCCGCTGTTCTGAACTCCTTCCCCACCGCTCCTCACC  
AACCCTGCCGACTCGAAAACAACACCAACGAACCCAAAACAAAGGAAAATCACAGCTGAAAATTT  
40 TCTGCTTTCTTAATATTTATTTACACAACATAACAAAGACACTCAAAAAAAAAACAGGACGCCCCCCC  
TAGGCATAATATCGGTTACGGAGGACCGCCCCCTCCTCCC

>'000203a-013.scf' came from CONTIG 13 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-013.scf"(284>351)

ATGAAGCGTTATATTTGTAAATTCCGTTATATTTGTAAATCACCTCATTTTTTACCATAAGCGC

>'000203a-015.scf' came from CONTIG 14 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-015.scf"(1>680)

CTGCGGCCCTCTACACTATGGATCCCCGGGCTGCAGGCGGAAGATGGCGGCCACGGCGGTGAACGGG  
50 GTGGCCGGCACCTCGAGCTCGGGGTCTGCGGCGGCCTCGGGCGCGATCCTGCAGGCCGCGGCCGGCAT  
GTACGAGCAGCTCAAGGGCGAGTGGAACCGGAAAAGCCCTAATCTTATCAAGTGCNGGGAAGAGCT  
GGGCGTCTCAAGCTGGTTTGTGGAGCTCAACTTCTGCCAACNNACAGGACCCAAATGACCAAG  
CAGCAGCTCATTCTGGCCCGTGACATACTGGAGATCCGGGCTCATTGGAGTATCCTACGCAAGGACAT  
CCCCTCCTCGAGCGGGACATGGCCCGAGCTCAAGTGCTACTACTCGATTACAAGGAGCAGCTCCGAGA  
55 GTCAGCCTACATGCACCACTCCTGGGCCTCACCTCCTTCTGCTGTCCCAAACCGNTGGCTGATTCCA  
CCAGACTGGACGGTGCCTGCCAAGACATCCAACACGGTACACAAGCATCGGGNCCTCGAGCATACG

AGGAGGCAGTACATAGTATTCTGGCAAGCACATCCCGCGAACTACCTTCTCATGATTGCTGAACTCA  
GAAGAAGTTGTGANGAAGGCATGAAATCTTTACAAGCCCCGACCCCCTCACAAACCAAAAAAAAAAACCC  
AAA

5 >'000203a-016.scf' came from CONTIG 15 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
016.scf"(8>560)

GCTCTATACTATGGATCCCCGGGCTGCAGGTTTCGCTTAGGGCGCAGACGGGGCAAACAGAGCCAGCATGC  
CGGTCGCCCCGAGCTGGGTTTGTGCGAAAACCTATGTGACCCCGCGGAGACCCTTCGAGAAGTCCCGC  
CTCGACCAAGAGCTGAAGCTGATCGGCGAGTATGGGCTCCGGGACAAACGTGAGGTCTGGAGGGTCA  
10 AATTCACCCTGGCCAAGATCCGAAAGGCTGNCCGGGAGCTGCTGACGCTGGATGAGAAAGACCCGCG  
CGTCTGTTCGAAGTAATGCCCTGTGCGGCGGCTCGTCCGTATCGGGTGCTGGATGAGGCAAGATGAAG  
CTGGATACATCCTGGGCTGAAGATGAAGATTTTTTTGAGAGACGCCTGCAGACCAGTCTTCAGCTGGGC  
TGCCAGCCATCACCAGCCCCGGGCTCTCCGCACGCACACAGGTCGCAGCAGGGAGACATCCGTCTCAT  
GGCGCTGGACTCCAAACCATCACTCTCCTCCTCCCTCGCGGGGCGNCCGGCCGGGAAGAANAAGCAA  
15 AGACAGGGGGT

>'000203a-017.scf' came from CONTIG 16 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
017.scf"(44>531)

GCACGAGGAGTGACCAGGGTTAGCTGGGATGCCCTCAGACTGCACTGGACCAGCCCCGATGGGATCT  
20 ATGAACGGTTTGTCTAATAGATCCGGGAGACTGACCAGCCCCAAGAAGTTCACAGTCTCACGGTTCCT  
GGCAGCCAGCACTCCGTGGAGATNTCCAGCCTCAAGGCTGGTACCTCTTACACAATCACCCTGCGTGG  
CGAGGTCAGGGACCACAGCACTCAACCCCTTGCTGTGGAGGTATCACAGCGGAGCTCCCCCAGCTGG  
GAGACTTATTCNGACTGAGGCTGGCTGGGATGGCCTCANACTCAACTGGACCGCAGCTGATCAGGCC  
CTTGAGCACTTTGTCTTTCAGGCGCAGGAGGCCACAGGGTGGNAGGCGCTCAAACCTCCCGGGGGCCAG  
25 GACATGCGGCTGGGACATCCGGGCCCTGAGCGCNCCCCTACAGAGCACATCCACGGTGATCGGGCTAT  
AGACCAGGCTCTT

>'000203a-018.scf' came from CONTIG 17 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
018.scf"(13>586)

AAATATGGATCCCCGGGCTGCAGNAATTCGGCACGAGGGTACCATCTATTTTTTCAAACCTGGCAGGA  
30 ATCCCCGGGGGGAAGCCCGCATACTCCTTCCACGTTACCGCAGATGGTCAGATGCAGCCCGTCCCCTT  
CCCCCAGATGCCCTCATCGGCCCTGGCATCCCCCGACACGCTCGCCAGATCAACACCCTGAGCCATG  
GAGAGGTGGTGTGTGCGGTGACCATCAGCAACCCACGCGACACGTGTACACGGGTGGGAAGGGCTG  
CGTCAAGGTCTGGGACATCAGCCACCCCGCAACAAGAGCCCGTCTCTCAGCTCGATTGTCTGAACAG  
35 GGATAAACTACATCCGTTCTGCAAATTGCTCCCTGATGGCTGCACTCTCATAGTGAGAGGGGAAGCTA  
GTACCCTGTCCATCTGGGACCTGCGGCTCCCAACCCGCGCATCAAGCAGACTGACGCCTCGGCCCGCT  
GCTCGCCCTGCCATCAGCCGGAATCAAGTCTGCTCTCGGCTGCAGCGAGGCACATGCTGGTGGGACTG  
CACACCAACGCGTGAGGCATNCAGGCACCGA

40 >'000203a-019.scf' came from CONTIG 18 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
019.scf"(13>287)

AAATATGGATCCCCGGGCTGCAGNAATTCGGCACGAGGCAGGCCTTTTTTTTCTCTCTCAGACAACCAT  
CTCATGGACCCCATTCAGGAAAGCTCTGAGTATATCATTTTCATGTCATCCAGTTGGCATTGATGAAGA  
ACCCTTACAGTTCCGAGTTCCTGGAACCTCTGCTAGTGCCACCTTGACGGGCCTCACCAGAAGGGCCA  
45 CCTACAACATCATATGGNAAGCAGTAAAAAACAANCAGAGCAGAAAGTTCGCGAGGAGGGGGTTNC  
CG

>'000203a-020.scf' came from CONTIG 19 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
020.scf"(2>215)

CTCCGTTATACTAAGGATCCCGGCCGCGGAATTCGGCACGAGCCTCAGTTTTTTTTTTCAGCCTCAGG  
50 CCCACCCTGAGGGTTCTCCTCCAAGCTGGCATCGCCCCACTTTACAGATGACCACCCAGGCTTGAC  
AGGGCCGCCCTGGACAAGAAGCTGATCAAGGCCCTCTTGACGTGCTGGCGCACCCCAAGAACTACT  
TCAAGTACA

55 >'000203a-021.scf' came from CONTIG 20 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
021.scf"(29>265)

CCTGCAGAATTCGCACGAGGAGAATCTATTTTTTCTCTTGATGAGGGTGAAAGAGGAAAGTGAATAAG  
CTGGCTTAAGACTCAACATTCAAAAACTAACATCGTGGCATCTGGTCCCATCACTTCATGGCAAATA  
GATAAGGAAAAAGTAGAACGGGGTCAGGCTTAATTTTTTTGGCTCCAAAATCACTGCAGATGGGGGT  
TGCAGCCATGAAATTAGAGATGCTTGCTTCTTG

5

>'000203a-022.scf' came from CONTIG 21 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-022.scf"(36>646)

10

AATTCGCACGAGGTGGAAGCTTTTTTGTCTGGGGGTGTGACTGGGGGCCGGAGTGCCCCACCCGATTG  
GTGGGTCCCCTTCCGCATTTAGGGTCCCTGAGCATGCTTTCTTGCCAGGGAGCTGGAAAAGTTTTCTGAC  
CCTTTTCCCCAGAAAGAGAGACAATAGATTGCCTTCATTTTGATGTCTGTGGCCTCAAAATTGATCATT  
TCCTGTCTCCTCCCTCCCTCCCCGCCCTGGGGCCCCCGCCATTCATCCCCACCCCTCCAGAGCCACTT  
ANGACCCACTTCTGACTAATTATGGATTCCAGATGCTTGGGATAAAAAGAAAAAGGACCAAGAACCCCT  
CCCCCTCTCTGACCTGGCCAAAGCCCTCCCCCAATCCCCAGGTCTCTGGAGGGCTCTGCTTAAGCCCGC  
CTCACCGANAGNAGGNATGTAGCTGTAGAAACAACCATGCAAACTGGGTGGCCTGCAGTTTACACCA  
CCCAATCTTCCCTCCTGGCTCCTTACATGATGAGGACAACCTGGCTGAGAAGGGCGCAAGCGTCTGGCT  
CACTGCTATTCTGAAATAGAACTGGCTCTTGCTGGCGTGGCCTGGGTAGGGCCGGCAGAGGGG

15

>'000203a-023.scf' came from CONTIG 22 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-023.scf"(1>640)

20

GTGCGTTAAATAGGATCCCGGCTGAGAATGCCGAGGAAAAGGCCAGGTAAAAAGGGCCCCGGCCCCGGC  
CGGGTGAAGAAGCAGGAGGCCAAGAAGGTGGTCAACCCCTGCTCGAGAAGAGGGCCCAAGAATTTTG  
GCATTGGACAGGACATCCAACCCAAGAGGGACCTCACCCGCTTTGTCAAATGGCCCCGCTACATCCGG  
CTGCAGCGGCAAGGGCTATTCTTTATAAGCGCCTGGAAGTGCTCCTGCAATTAACAGTTTACGCA  
GGCCCTGGACCGACCAACAGCTACTCAACTGCTTAAGCTGGCCCCAAGAACAGACCACAGACAAACA  
AGAGAAAAAGCAGAGCTGCTGGCCGAACTGAGAAAAAAGCGCGGGCAAAGGCGAGTCCCTACCAGA  
GCCCCACTGTCCTTCGAGCAGGTNACACGGCCACACCTGGGGAAGACAGAAGCTCAGTGTGTGATCG  
TCAGAGTGGTCCCTTGGCTGGGGTCTCTGCTGCCTGGGCGCAGAGGGGNTTCTATGCTATAAGGCAGG  
CGGCTGGCGCGTGCAGAGACGGCCACGACTTACCATCACGGGAAAGAGCTGTTAGGGGAACCAGAC  
ATTAAACAAAAAGAACGGGTGGGGGAGGCGGGCA

25

30

>'000203a-024.scf' came from CONTIG 23 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-024.scf"(1>602)

35

CGCCGCCGCTTAAACTATGGATCCCCGGGCTGCAGNAATTCGGCACGAGGATTACAAGCGGATAGAA  
GGGCTAAAAATCAAAGGCGAAGAGTTCATATGACTCTGGAGTTACCATGGAGTGCTGATAGAGCAATT  
CAGCAATTTGGACGAACCTATAGATCAAATCAAGTTACCGCTCCTGAATATGTCTTTCTGATTTTCTGA  
TTGGCAGAAGAACAAAGATTTGCATCTATTGTTGGTAAAAGACTTGAGAGTTTGGGCGCACCTACACA  
TGGAGACAGAAGAGCAACAAAACTAGAAAACCGAGCCGCTCCACCTTCGATAATAAGATGGAAGA  
AAAGCTTTAAAAATTTGTGATGAAATCCAATGTGAAACCAAATTCCTCCTTGTTTACCACCTCCAGACTA  
TCCTGGAGATTCTTTAAGAGTTCGCAAGACTGATAGAGTGTCTTATAAAGTGAAAAAGTCAGAACTCT  
CTTTTATAAAATTTAAAAACAAAGNAAATTTTAACAATTTGGGCGGGAGGGCCCAAAAGCCTTTTTTTT  
TCGCACCCCTCCTGCGGCTCAAAGCAAAAAAGAAAAACATAGGAATTAATGTTGTTG

40

>'000203a-025.scf' came from CONTIG 24 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-025.scf"(29>176)

45

GGGCTGCAGCTCCATGGGGTGTGTTGGTGCCTGCCAGCCACGGAGGCCGGGCGGCCAGAACGCGCACAG  
AGGGATATGATATGGTCCGGTGTGATGGAGAGAGCAAGCGGGACCGTGACGCTCCAGGACACTGG  
CCCCGCGGGGAGCC

>'000203a-065.scf' came from CONTIG 25 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-065.scf"(1>665)

50

GTGGCGCCCTCTAAACTATGGATCCCCGGGCTGCAGGTGGACTACACCATCACTGTCTATGCTGTCACC  
GGCCGGGGGACAGCCCGGCAAGCAGCAAGCCCGTTTCCATCAATTACCGAACAGAAATTGACAAACC  
ATCCAGATGCAAGTGACTGATGTCCAAGACAACAGCATTAGTGTGAGGTGGCTGCCTTCAAGTTCCC  
CTGTTACTGGTTACAGAGTGACCACTGCTCCTAAAAATGGCCAGGACCATCGAAAACGAAAACCTGTA  
GGTCCAGATCAAAACAGAAATGACAATTGAAGGGCTGCAGCCACAGTGGAGTATGTGGTCAGTGTCT  
ATGCTCAGAAATCAAAACGGAGAGAGTCAGCCTCTGGTTCAGACAAGCGTTACCCACCATTTCTGCACC

55

AACCAACTGAAATTNACTCAGTGACACCACCAGCTGACTGCCAGGACGCACCNATGTCACTCACTGGT  
TCGAGGCGGNGACCCGAGAAAGACGNACGAGAAAGAAATCACCTGCTCTGAACTATCGGTTGTTTCAGAC  
TAGTTGCACCAATGAGGAGGCTTGCTTTAGACCTGACACAACGCTAGGAGGTCAATTGAAAGCACTCA  
AAGGCCGGGAAAGTTGAACACTCCTTATGAACAAATGAAAACGGTCAGTGGCTCC

>'000203a-026.scf' came from CONTIG 25 at offset 40;"E:\SEQUENCE\export\EST\_db\000203a\000203a-026.scf"(38>628)

AATTCGCACGAGTGTCTATGCTGTCCCGGCCGGGGACAGCCCGGCAAGCAGCAAGCCCGTTTCCATC  
AATTACCGAACAGAAATTGACAAACCATCCCAGATGCAAGTGACTGATGTCCAAGACAACAGCATT  
GTGTCAGGTGGCTGCCCTCAAGTTCCCTGTACTGGTTACAGAGTGACCACTGCTCCTAATAATGGCC  
CCAGACCATCGAAAACGAAAACGTGTAGGTCCAGATCAAACAGAAATGACAANTGAAAGCTTGCAGCC  
CACAGTGGAGTATGTGGTCAGTGGCTATGCTCAAAATTCAAAACGAGAGAGTCAGCCTCTGGGTCAA  
CAGCGGAACCACTTCTGCACCACCCACCTGAATTACTCAGNGAAACCAACAGCTGACTGCCCAGG  
NACGCACCCATTTCACTCACTGTTTCGAGGCGGTGACCCGAAGAGAGACGNACGAGAAAAATCACCTG  
CTCTGAACTATCGGGTGATAGACTAGTTGCACAAATTAGGAGGCTAGTCTAGACCTGAAGCAACGCT  
CAGATGTACATTGAAAGAGCCTCAAAGCCGGGAAAGCTTGAACCCTACA

>'000203a-027.scf' came from CONTIG 26 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-027.scf"(30>646)

CTGCAGAAATTCGGCACGAGGAGCGAGTCTGTAGGTGCGCGTGGAAGTACGGGTCATGGCTGCGCC  
CGGTCCAGCGCTCTGCCTTTTCGACGTGGACGGGACCCCTGACGGCCCCGCGGCAGAAAATTACCAAAG  
ACATGGATTGCTTTCTGCAAAAACGTAGGCAGAAAATCAAAATTGGTGTCTGCGCGGGTTCGGA  
GAGAAAGTACAGGAGCAGCTGGGAGATGACGTTATTAATAAATATGATTACGTGTTTCAGAAAATG  
GCTTGGTAGCATACAGAGATGGGAAACTCTTGTGTAAACAGAAATATTTAAGGTCACCTGGGTGAAACC  
CTAATCAAGATATATTTCACTACTGTCTGAGCTACATCGCGAAAAATCAGCTCCNGAAAAAAGGNCAC  
TTCATAGAGTCCGTAAACGTGAGCTGACGTGTCTGCGCGACGGAAAAAGCTGCAGCAGAANAACCATGTATC  
TACGACTGTACAAAAGAAACATAAAACAAAGTCGGAGNATTGCAAAGATTGCTGTAAGGCTACGTTTCT  
AGAGNCAATCACTTATTCTCCCTAGCTGAACAATACGCTGGAACGGGAAGAAGATAAACTTATTTTGG  
GACAAC

>'000203a-028.scf' came from CONTIG 27 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-028.scf"(40>622)

CACGTAGGGGCGACCGCAGGCCCTCTCCCCAGGAGCTGGACAAGGGCATCGACCCCGAGAGCCCCCT  
GTTTCAGGCCATTCTGGACAACCCCGTGGTGCAGCTGGGCCTGACCAACCCGAAGACCTTACTAGCAT  
TTGAAGACATGCTCGAGAACCCGCTGAACAGCACCCAGTGGATGAACGACCCGAGACGGGCCCCGGG  
CATGCTGCAGATCTCAGAATCTTCCAGACCCTGAACCGCACATATGCCGCGCACTGCAGCTGCCAGCC  
CAGAGAGCCTCTTCTTCCAGCCCCAGGGGTGGGGAGAGGGTGCAGACCCCAAGGTGCGCCTGGGCTG  
GGGGCGGGGAGCAGGGGGGCGTGGAGGGACCCCTGCCCTGGGTGTGGCGCCAGGCCGCACTCCGCTG  
GATCTTCTGGAAAAACTCGGNGGCAGGGCCGGGTGGCTCCACCCCTGACAGGTTACGACAGGCGCCA  
CCGGGAAGGGGGCTCCTTCAGGCCCTGGCTCTGACGTATTGATTAAACGAGCGCGCTGGAAGACCTGTT  
TGAAAAAGAATGTCAACCAAGTAGGAAGGATAATGGGAAAAAAA

>'000203a-029.scf' came from CONTIG 28 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-029.scf"(35>595)

AATTCGCACGAGGTCATCCCTAAGTGGCCTGAAGATGGACAAAGGGAAGTAACAGGCACGTGATGTT  
GGCAAGGATGCTTCTAGGGCTAGAGGATCAGTGGTGGGAGAGAGCTGCAGAATCCACCAGCCAGAAC  
TGCAGATAACGATATCTATGGTCAGGGGCTGTGACTGAGAGAAGGAAACTGAGGTTGTGTTCTGAAAG  
TACATAAACTCTCACATATACCCAGTTCTTCAACATCTTCCCTCCTCACTTTGCAGNGCCATTTTTTTTT  
TGCATTAGGCAAATTGCTCAGACTTTCCAGAGCCATGCCCATCCCGTCTCTGGAACCCCCACACCTCTG  
AGAGTGGGATCACCACGTCCTGCAGGGCTGCTCCCTCCAACTACCTTTAGAGAGCAGGACAGGAGCT  
GTTTCACCACAAGACAAAATCAAACGAGAGCAGACGGGTAAACAAANAAGACAGGGGCAATGTTTTC  
TTGNGTTTTGTTTTTTTCCATTGGAGGTGACACAAAATTCAGCTACAGTTCCCTCTCCCCCCCATT  
TTTTTTTAAACAAANA

>'000203a-030.scf' came from CONTIG 29 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-030.scf"(36>676)



>'000203a-035.scf' came from CONTIG 32 at offset 542;"E:\SEQUENCE\export\EST\_db\000203a\000203a-035.scf"(38>379)

TTTTTTTTTTTTCTTTCTCGCTCCCTTCCTTTCTTCCTTACTTACTTCTTTGCTTTTGGCTGCATTTTCTTT  
AAATTCGACACAGTTATGTTAAAAAATATATGCATTGTAAGTTTGGTGTAAATTTAAAAATATGTG  
5 GAGTGATTTTCATTCACTCTCCTGTTTTAAACATTTGTTAAGGACTCAGCATGTGAAGGAGCAAGAGATA  
TAGTCATTTTTATTAGAAAACCTCAGTGTTCTAATTTTCATCAGAGACCGNGAATAATCAGAAGATGAC  
ATGATTTACTTGGAATATACAGCTTATCAAGGACTTCGTTATTTATGATGGTTATTTAAAAATC

>'000203a-037.scf' came from CONTIG 33 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-037.scf"(37>554)

CGCAGCCACTCCGACCGGTGCCGCTCGTCTGCTTCGCCATGACTTCCTACAGCTATCGCCAGTCGTC  
GTCCACCTCGTCTTCGGGGGTATGGGCGGCGGCTCCATGCGCTTCGGGGCTGGGAAGCGCCTTCCGC  
GCGCCCAGCATCCATGGNGGCTCAAGTGGCCGCGCGTGTGCGGTGTCCTCCGCCCCGCTTCGTGTCTC  
15 GTCTCCGGGGGTACGGCGGCGGCTATGGGGCGCCCTGGCCACCTTCGACGGGCTGCTGGCGGGCAA  
CGAGAACTCACCATGCAAAACCTCACGACCGCCTGGCCTCCTACCCTGAGAAGTGCAGCGCCCTGGAG  
AGCCAACAGCGATTGGAGTGAAAATCGCGACTGGACCAAAACAAGGCCGGCCCGCCGCGACTACACC  
TACTCAAACATAAGACTGCGNACCAACTCGTGGCACATGAAACTCATAATCTGCATACACAGCCGTCG  
CTGCAAGACTCGCACATTGAGACGACAGCTGGCAGAGGGAGC

>'000203a-038.scf' came from CONTIG 34 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-038.scf"(38>594)

NAATTCGGCACGAGGAGCAGATCCTGGCTGCCCTCGAGAAAGGCTGCAGCTTCCTGCCGGACCAGTAC  
CGCAAGCAGTGTGACCAGTTTGTGACGGAGTATGAGCCAGTGCTGATAGAAATCCTGGTGGAGGGGA  
25 TGGACCCTTCCTTCGTGTGCTTGAAGATTGGAGCCTGCCAGCAACCCACAAGCCGCTTTTGGGAGCTG  
AGAAATGTGTCTGGGGCCCCGACCTTACTGGTGCCAGAACATGGAGTCGCAGCCCTGTGCACCCGCTCG  
AGCACTGCAGCGTCACGNGTGAAACTAGGGCACGCTTCACCCTGAAAACTGCAGCGTCTTTTCTGCT  
CGGTTGTCTGGGGTAACCACCAATTTGTGACTTTGTATAAAAAAGACCCTTCCTCATCCTTNTTCTCC  
CTCTTGTCGTGCTTGCAGGCAGTGACTGCTGTTTCGTCTCTTTTGTAAAAAGCGAACCTCCTGAGTTT  
30 GATTGTGGCGGGGTAGGGGAAAGGGTTGTGCGAGGAACGACCTCGCGAGGCCGCCCGCTGTTGGGG  
GGGCCTGCGCT

>'000203a-040.scf' came from CONTIG 35 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-040.scf"(29>585)

GGGCTGCAGGTTAATTCATTTTTCTGGAAAAAGAGAAGATGTTTATTTATTTATTTTCCATGGTAAAT  
35 TCTTTTGAATCTGCCTCTTAAACCTAACTCTGGGCTCTCTCAGGAGGGGCAAAGAGGACCTTTGAGTTA  
AACCTCCAATGGAGACCCTGGGAAAGAACCGGAGGCATAACACCCNAGCCGCCCTCCAAGTGGACT  
GTANGACTCCCCAGACCCGCTGCCAGCTGCTTCTGCCATCGNTCTGCCTGGTTGGGTTNTGGGTCCT  
GGATCCCACCCGAGCCCTGTAGGATGGCACCACAAGCCCTACATGAAGAGCTTTGTGGTGTCACTAAA  
ATGTGTGTTTCGGCACGTTGCTGTCATTCTGCCTGNCTGCCATGCTGAAAAGCTGGCACAGCCCGANA  
40 AGCCAGCGAAAAACACCTTCTGCCAGANCTCTGNCCCACTCGAGATGAGACCACAGCTGCTGTCTCTCC  
CAGAACAGGTATTATATTTAAGTAAAACCTGTTACTAAAAAGTTTGTTCCTCACTTATTCAAAACAAGAG  
AAAAGGGGCGT

>'000203a-041.scf' came from CONTIG 36 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-041.scf"(1>593)

GGGGCCCTCTAAACTATGGATCCCCGGGCTGCAGNAATTCGGCACGAGGCGGACCTGCTGGAGCTCCT  
GGCACTCCTGGACCTCAGGTATTGCTGGACAGCGTGCTGTTGGTTCGGCCTGCCTGGTCAGAGAGGAGAA  
AGAGGCTTCCCTGGTCTTCTGGCCCCCTCTGGTGAACCCGGCAAANCAGGTCCTTCTGGAGCAAGTGG  
50 TGAACGTGGCCCCCTGGTCCCATGGGCCCCCTGGATTGGCTGGACCCCTGGCGAGTCTGGACGTG  
AGGGAGCTCCTGGTGTGAANGATCCCCTGGACGAGATGGTTCTCTGGCGCCAAGGNTGACGNGTG  
AGACCGNCCCTGCTGACTCCTGTGCTCCTGCGCTCCCGGGCCCCCGNCCCTGTCGACTGCCGACAGC  
NNGACGGGTGAGACGGCCTGCTGTCTGCTGTCCCATGCCGTTGTGCCGGGGCCCGTGNACCCAGCCCC  
CGGGACAGGTGAAAGCGACAGGGACGAGCATAAGTCACGNGCTCTTGTCTCAGTCCCCGCCTCCGCTT  
55 CTGGAGCAGTCTTCGACTTGTCTGTGGCCGCGCCCCGTTTGTCTCGCA

>'000203a-047.scf' came from CONTIG 36 at offset 42;"E:\SEQUENCE\export\EST\_db\000203a\000203a-047.scf"(41>502)

CACGAGGACGGACCTGCTGGAGCTCCTGGCACTCCTGGACCTCAAGGTATTGCTGGACAGCGTGGTGT  
GGTCGGCCTGCCTGGTCAGAGAGGAGAAAGAGGCTTCCCTGGTCTTCTGGCCCCCTCTGGTGAACCCG  
GCAAACAAGGTCCTTCTGGAGCAAGTGGTGAACGTGGCCCCCTGGTCCCATGGNNCCCCCTGNATTG  
TCTGGACCCCCTGGCGAGTCTGGACGTGAGGGAGCTNCTGGTGTCTGAAGGATCCCCTGGACGANATTG  
TTCTCCTGGCGCAAAGGTGACCGTGGTGAGAACCGGCCCTGCTGACCCTCTGTGCTCCTGCGCTCCCGT  
GCCCCGNCNTGTGCGACTGCCGACAGCGTGATCGTGGTGAACAGGCTGCTGTCTGTCTGCTGCCATGNC  
CNGTGTGCCNNGNCCCCCTGNACCCAGACCCGGTGACAGGGAAAAGCAACAACG

>'000203a-042.scf' came from CONTIG 37 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-042.scf"(1>652)

CGGCGTCCCTCTANACTATGGATCCCCGGGCTGCAGTGGTTCTGCAGCTCTGTGGCAAGCCGCGGAGT  
CTGGGTTCTGATCCGCGAGGATGGGGTTTGTAAAGTTGTCAAGAACAAGGCCTACTTCAAGAGATACC  
AAGTGAATTCAGAAGAAGGCGAGAGGGCAAACTGACTACTATGCTCGGAAACGATTGGTAATCCA  
AGATAAAAAATAAGTACAACACACCTAAATACAGAATGATTGTTCGTGTAACGAACAGAGATATCATTT  
GTCAGATTGCTTATGCCCGTATAGAAGGAGATATGATAGGTTGTGCAGCTTATGCTCACGAACTCCCA  
AATATGGNGTGAAGGNTGGCCTGACAATTATGCTGCGCATATTGTACTGGCCTGCTGCTGCCCCGCGAG  
CTTCTTTATAGGTTGGATGGACAAAATTATGAAGCNAGACGAGGNGATGGAGAGATACATGNGNAAG  
CATCGAGCCAACTGGGCCTCACTGTAAGTGNAGCAGACTGCAAACTCTACGAGTTAAGTTTGGCCCTAG  
GACGCGAGAGCTGCTTTCTACAGACACGTCCTGTTGATCAAAGCAAATCAGCGAGCCCGAAGCATAGG  
CAAAGTGAATACGCCCTGTGGAAAAAATCCAAAACCTTTTCA

>'000203a-044.scf' came from CONTIG 38 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-044.scf"(1>627)

CGGCGCCCCCTCTACAACCTATGGATCCCCGGGCTGCAGNAATTCGGCACGAGGCAGGACAATCAAGTGT  
GGCAGCTGGGCTCATCGTCCCCAACTTCACTCTGGAGGGACATGAGAAAGGTGTGAATTGCATTGAT  
TACTACAGGGATGGTGACAAGCCATACCTCATCTCTAGAGCAGATGACCGTCTTGTGAAAATATGGAC  
TATCAGAATAAACTTGTGTACAGACACTGGAGAGGACATGCCCCAAATGTGTCTTGTGCCCAGTTTAT  
CCTGAGCTGCCCATTTTATCACAANTTCAAAAAATGAACTGGCGTTTTTGGCATTCAAGCACCTTCGCC  
TTGAGAGGACTTGATTATGAATGGAGAAGAGATGGGGGGGCGCCGCGAGGTCCATAACGTGTTTTG  
GCTTTGAGAAAGAAGCATATGTTAACTTGTGCGGAGAACTGCTTGTCTGGTGCCAAGGAAAAATAATGGG  
CCAACATCAAAATCACCAGCCACTAAACAAGGAGAGTGTAATTAAAGAAAAGATGCCTGCATAAAAA  
TGCAGTTGAATTACTCAATATCACAATCTAAGCGCGGTGGGGGGGGGGGGGAAATTTTTCCGCAGCCC  
GAAACAATGTGGGCGC

>'000203a-045.scf' came from CONTIG 39 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-045.scf"(44>624)

GCACGAGGCTTGCCTGCTGCCTGCCTGCCACTGAGGGTTCCCAGCACCATGAGGGCCTGGATCT  
TCTTTCTCCTTTGCCTGGCCGGGAGGGCCTTGGCAGCCCCTCAACAGCAAGCCTTGCCTGATGAGACAG  
AAGTGGTGGAAGAAACCGTGGCCGAGGTGGCCGAGGTACCCGTGGGAGCCAACCCCGTCCCAGGGGA  
AATAAGAAGAATCGATGATGGTGCCGAGGAAACCGAGGGGAGAGTGGGGANCGAGAACCCCGCCA  
AACCACCACTGCAACACGGCAGGNGTGTGAACCTGACGAGAACACACCCCATGGTGTGGCCAGACC  
CCACCACTGCCCTGCCNTCGCGAAGTTGAGAGTGTGCACAACGACAACAGACTTCGATCCCTGCCAT  
TTTTGCACNAGGNACATGNAGGCACCAAAAGGCCCAACTCACTGNCTACTCGGCCTGAATACATCCCC  
TGCTGCATCGACTGATGATCCTGGCTGCGACGCTAAACGCCGNCACTGACAAGGAAGCACACTCGACG  
AAAATATGGATGAAAAACCAATAAAGCCGGGGGGGCTC

>'000203a-048.scf' came from CONTIG 40 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-048.scf"(38>559)

TTATACTCCAAGGCCTGGCAAAATCACATAATCAAGATTGAATTGTTTCAGAAATATTGGCAGGATTC  
TTGGACTGTGTCTACTACAGAATGAACTGTGTCCTATCATTGAATAGACATGTGATTAAAGTGTTC  
TTGGTAGGAAAGTCAATTGGCACGATTTTGCTTTTTTTGACCCTGTGATGTACGAGAAGTTGCGGGCAC  
TTATTCTTGCTTCTCANAGTTCAGATGCTGATGCTGTTTTCTCAGCAATGGATTTGGCATTGCAATTGA  
CCTGTGTAAAGAGAAGAGGGGAGACAGNTGAACTATTNCTATGTGTAATATACCAGTCACTCTCAA  
TGTTATGAGTATGTGCGGAATATGCTGACATAAATGTNNGTAGTGCAGACACCATACTGCATGAGAAG



TCTCTGNTGTGCTTCAAAATCATATANATTACACAGAAATTAGCTTTGTTAGCTGGNGAGNTACGGCG  
AGCGTCAGTCACTCTTCTGAGATAGAAAAGTGAAC TTGCGTC

>'000203a-049.scf' came from CONTIG 41 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
049.scf"(1>306)

GGGCGCCCTTAAATAGGATCCCCGGCCTCAGGGTGGCAAGAGGCCGTGCTATTTTTTTTTTTGTAGAAG  
TTTGTGCTGATGGCATCTTCAAAGCTGAACTGAACGAGTTTCTCACTCGGGAGCTGGCTGAAGATGG  
GTACTCTGGAGTTGAGGTCCGAGTTACACCAACCAGGACAGAAATCATTATCTTGGNCCACCAGACAC  
AGAATGTACTTGGTGAGAAGGGCCGGCGGGAATTGACTGCTGTGGTTTCAAGAGATTTGGC  
TTCCCTGAAGCAGTGTAAGCTTATGCTGAAAA

>'000203a-050.scf' came from CONTIG 42 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
050.scf"(39>525)

NAATTCGGCACGAGGCTAGTCTCGAGTTTTTTTTTTTTTTTTTTCTTTGGAAAACCAAACATGCTTTAT  
TTCATTTTTTTCACAATTTATTTAAACATCTCACATATACAAAATAGGTACAATTTAATTTTTCTGCTTG  
TCCGAGAAAACAAGACTTCTTTGGAACCATGGNAGAGGATGAAAATGAGACTGGCAAAGAACAATGC  
TGAANTTAAAGAAGAGACAANTGTGGGCAAATGATCCACTTACTTTGTGGAATAAGATGTAAAGTAC  
TGATGTTAAAGTCAAATGAAAAAATACACAATACAGCTCAACAGCAGAGGAGTATCTTCTCAAAT  
TCTCCTAGCACCATCAACATTCTTNCAGTATCTGAAATACTGTTAATTAGCACCTTCGTATTTTGAACN  
AAAAAACACAAATACCTCAGCTCATCTCTGGTCAGCACTCACGGTGTGGTATCACACTCACAGGAAAN  
GTTTTGA

>'000203a-051.scf' came from CONTIG 43 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
051.scf"(38>406)

NAATTCGGCACGAGGATCATATAGTAAACCCAAGCCCTTGACCTCTTACAGGAGCTTTGTCTGCCCTCT  
TAATAACATCCGGCCTAACCATGTGATTTCACTTTAACTCAATGACCCTGCTAATAATTGGCCTAACAA  
CAAATATACTAACAATATACCAATGATGACGAGATGTTATCCGAGAAAGCACCTTTCCAGGGGCACAT  
ACCCAGCTGTCCAAAAAAGCCTCCGTTATGAATATTCTTTTTATTATCTCCAAGTACTATTCTTTACCG  
ATTTTTTTGAGCTTTTACCACTCAGCCTCGCCCCACCCCTGACCTAGCGCTGCTGACCCCCACACGCAT  
TCACCCACTAACCCCTACAAGTCC

>'000203a-053.scf' came from CONTIG 44 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
053.scf"(37>515)

TGAGAGCAGCAGCCAAAAACCACGCTCGAGTGACAGTAGTATGTGAGCCGGAGGACTATGCAGCTGT  
AGCCTCAGAGATGCAGGATTCTGACAGCAAAGACACGTCCTTGAGACAAGACGCCAGTTAGCCTTG  
AAGGCTTTTACTCATACAGCACAGTATGATGAAGCAATTTTCAAGTACTTTCAGGAAAGAGTACAGTAA  
AGGAGTATCTCAGATGCCCCCTGAGTATGGAATGAANCCTCATCAGACTCCTGCCAGCTGTATACGC  
TGAAGCCCAAGCTCCNTTATCAGTCTGAATGGAGCCNTGATTATAANCTGGGTGATGCTTTGAA  
TGCCTGCAGCTGGTGAAGGAACCTNAAGAGCTTTTAGCTTNCAGTGTGCGTCTTCAAACATGTAGCC  
CACAGGCTGCTGTTGGATTCACTCATGAAGAGAAACCACTCTGCATGTTATGATTGTACAAACCTCCA  
CCGCA

>'000203a-054.scf' came from CONTIG 45 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
054.scf"(40>404)

CCTAAATTACTCAATAGTTTTAAAGTGTTACATATTCAAAGCCTTTTCCAGACCAGGGAGAGAGTTCTG  
TTAGAGTGAAGGGTAGTGTCTCTTGCGCATTTCTGTGTGTGATTTCTAAATGCTACTGTGTGTGTTGTG  
TGTGCTCCACAGTTTATATGCAAAGACTTTGAGCAACATTTATAAAAAGTATTTTCTCTTAGAACAAT  
TCAAGAGATTTATTTTGTGGCTACCACAGNCACTGCCAGTGGATTGTTTTTCTTCTAAATCTGAATATT  
GACCAAAAATTTGGTGATTTTATGACTTTGTTGTGTTGGTGTTAATTTTCTTAAAAATTTAAACTTTG  
GTTAAATTCAGAAATC

>'000203a-055.scf' came from CONTIG 46 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
055.scf"(1>728)

GTGCCTCTCCCTATACTATGTATCCCCGCGCTGCAGTATATTTTGCATGTAGGAGAACATGTAATCTCT  
ATCTTCCCTTAGCAGGATCAAACCTAGGGCCTTCTGCATTGCGAGCACAGAAGCCTATCCTCTGGACC  
ACTTGGGGGAGTCCCCGCTTTTCTTTGCATCCCAAAGAATATTATAACTAACCTAAAGAAAACCGCATT



TTCCCCCTTATCGGCGCGCTTCTTTCCCTTTAGTCTAAGACAATAATGTCTTATTGTCTCTGGGGGGGACAT  
AGTCAGTACGGGTAAAGCTCCTCTAACCTTTGGTGGCATTTTTTGCCCCAAATATTGCTTTTCCAAAAA  
CCACAGAGGCTGTTTCTTTTATTAAATTCCTTCTGCCGCCCCCACTTGGGGGTGGGTGGCCTCTTG  
GTCTTTTCTTAATAATAAAACAAAACGGTTTGACTGTGTCTCCCCAGGTACTTTTTTTTCTCTCTTTCA  
GAGTACTGTCAACCGGACTCCAGTTTCTCCTGGGACGTCAAATTTTCTACTCTCATCGCCTCTGTGT  
GGCCTTTTTCCATTTCAAGAAATTCTCGACCTATTATTCCTCCTTAAAAAATATATCATGCCCCCCCC  
TCTACTTGCTTCGCGACAGACACAACAATTTTCTTCTAAGCAGGCGAACCACAACAGAATAGGAAGAT  
ATCTATACAGAAGGAAAGAACGTATTTCATGGCGATCT

```
10 >000203a-056.scf came from CONTIG 47 at offset 0;"E:\SEQUENCE\export\EST_db\000203a\000203a-
056.scf"(17>140)
TCAGGGATCCCCGGGCTGTCAGCTGCGTCAAGTGTTGTATGAATGTTTTCTGGGCCCTGGCGGCGACT
ACAGCGGTGCTGTTCTGTTCCTGTCGCGGGCTGCGGTGACTCGCTGGCGGCTCTTC
```

```
15 >000203a-057.scf' came from CONTIG 48 at offset 0;"E:\SEQUENCE\lexport\EST_db\000203a\000203a-  
    057.scf"(10>722)  
CTCTATACTATGGATCCCCGGGCTGCAGNAATTTCGGCACGAGGAGGTATGTCTGAATGTGTTTCGACT  
ATTTACAGCCCCCTTTCCTCGCAGGGCCCATGAGTAAGCTGTGGCGGCGCGGGAGCACCTCTGGGGC  
TATGGAGGCCCTTGAGCCTGGGGAAGCCCTGGAGTTGAGTCTAGCGGGTGCCACGGCCACGGAGTG  
20 CACAAGAAAAAGCAAAAGAACACATGAAGAAAACAAAGATAAAACACTACCAGGATGAAGAGGCT  
GGGCCAACGCAGCAGTCTCCTGCCAAGCCCCAGCTCATACTCAAATCAAGTTGGGCGGGCAGGTCTTG  
GGACCAAGAGTGTTCCTACCTTCACTGTGATCCCTGAGGTCTCTCGCTCACCCCTCTCCCTTATGNTG  
GGAACATGAAGAGTACCTGTGAAGGAGCCCCCTGACATACCGCGCTGCTGGAGAAACAAAACACTGCCC  
CTCCCATGGGNACTGCTGNGGNTANAGCCAGAGAAGAGAATACGAGGGCTGAGCTTGNAAGGGAGC  
25 GAGACAGAAACCAAGAACAGACAGCTGACAGTGCAGAGTTGTGAAGCCGAGCACTCCGGTGCTCT  
GCTGGCTGCGGCCCTTACAAAAGGGGAGGGGGGCGGAAGGGGGGAGGGGCGGGAAAAAAAAAAAA  
CCCCAAGAGCGGGGGGGGGGGGCGGGGGGGGGGGGGGCCCG
```

>000203a-058.scf came from CONTIG 49 at offset 0; "E:\SEQUENCE\export\EST\_db\000203a\000203a-058.scf"(38>620)

30 NAAAGACTTCATGAAGGAGAAGAAAAGGAAAAAAATCAAAGGATGACTACAGCCTCTCTTCATCTCA  
GCTTTGCAAAGCATGACTCAACAGAGAGATCACATTCTTGAAGACTCTCCAGACCACAGATTGAAGAT  
AAGTTGTTGTGCTGCACTATTTCTGTTGCTACTCGTGAGAGTCACTACCAGCCTCTCTTCTCAGGATTA  
ATGAATGGGCCAGAAACCGGGGGCAGAATGACTNCAGGGGCACCCCCAACACCAGATATTGGCATAA

35 GGAAACAGTACAATGAAAAAAGTCATACTTGACCCTTGTCATTCCACANAGCATGATGTACTATCTA  
AAACAAAAAGAAAGAGCTGCTTTGGGAGAAGGGTTTTAAAGTTGTTTATCAAAANAAAGATTANAAGA  
GGAAACATCCAGTNTATNAGATGGCATTTACTTTNAAAGGCTCTGTCCCTGTGTAGGCATGAGATTGAT  
ACAGNACAGCGGGCTGCCAANCAGNTACTAATTGTNTCTGCTCTAAGAAGGGNCCTCTTGCTTCCTTG  
TGATATCTTGCAGAGCCGACTGAGGACAGAAACACAATAAG

>'000203a-059.scf' came from CONTIG 50 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-059.scf"(39>620)

CAATTCGGCACGAGGGTGAGTGACATCGTCTTTAAACCTGCGTGGCAATCCCTGACGCACCGCCGTG  
ATGCCCAGGGAAGACAGGGCGACCTGGAAGTCCAACCTACTTCCTTAAGATCATCCAACCTTCTGGATGA  
45 TTATCCAAAATGCTTCATTGTGTTGGGAGCAGACAACGTGGGCTCCAAGCAGATGCAGCAGATCCGCATGT  
CCCTCCGCGGGAAGGCTGTGGTGCTGATGGGCAAGAACACGATGATGCGCAAGGCCATCCGAGGGCA  
TCTGGAACAACCCGCTCTGGAGAACTGTGCCTCACACCGNGGAATGTGNNGCTCGGTACCAAGAG  
ACCTACTGAGACAGGACAGCTGCTGCCACAGGGCCACTGCGCCCGGCTGTGCATACGCCGGGAGACCT  
GGCCACCAAGACATGNCTGGGCCGAAAGACTTCTCTCAGCTTAGCACACACGATACTCAGGCACAGAAC  
50 CTGAGAGGCATGATAAAAGCAAGACGCGAGCGACGCGACACGCCATCCCTTCTGCGCCCCAAGG  
GGAAAGCAGATACCCAGCTAAAGACCGCTCTCTCGGGGGG

>'000203a-083.scf' came from CONTIG 50 at offset 7;"E:\SEQUENCE\export\EST\_db\000203a\000203a-083.scf"(45>614)

55 GCACGAGGGTGACATCGTCTTTAAACCTGCGTGGCAATCCCTGACGCACCGCCGTGATGCCCAGGGA  
AGACAGGGGCGACCTGGAAGTCCAACTACTTCCTTAAGATCATCCAACCTCTGGATGATTATCCAAAAT

GCTTCATTGTGGGAGCAGACAACGTGGGCTCCAAGCAGATGCAGCAGATCCGCATGTCCCTCCGCGGG  
AAGGCTGTGGTGTCTGATGGGCAAGAACACGATGATGCGCAAGGCCATCCGAGGGGCATCTGAAAAACA  
ACCCGGCTCTGGAGAACTGTTGCCTCACATCCGGGGGAATGTTGGCTTCGTGTTACCAAGGAGACC  
TCACTGAGATCAGGGACATGCTGCTGGCCAACAGTGCCAGCTGCGCCCGGCTGTGCCATACGCCGGTG  
5 AAGCCTGGCCAGCCAAACATGTCTGGGCCCCGAGAGACCTCTCTTCAGCTTAGCACACAGAAANATTAG  
GCACATGAAATCTGAGAGGCACGATAGAAGAACAAGAGCGCACGAGCAGCGTGACAGCGACACCCCT  
TTCTCGCGNATCACAGGTGACAGCAATT

>'000203a-060.scf' came from CONTIG 51 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
060.scf"(1>262)

GGGCTAACAGTCCGCGAGCCCGGCAATCCGCAGCCGGGGCCACAGGAACATGCGTCTGCTTGGGGGG  
GAGAGGGCCGGGCTAGAGCGAGCAAGGTGAGGGGGGGGGGGGGGACCTCCCGCGGATACAAGGTC  
ACACACCCCTCCTAATGCAGAAGGCGACGGTTGCAGGAAGGGCAAATAAGGACTCGCAAGGTGTCT  
10 AGGGGAACGAGTAAATGAAAGGCCACGGCGCGAGACGCGAGCGACCACCCAGGAGAACCGCG

>'000203a-061.scf' came from CONTIG 52 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
061.scf"(39>494)

NAATTCGGCACGAGGGTGAGTTTCATTGAGTTAAATAAATACCTTTTGAAAAGGAGTTTGCCGATGCA  
CCAAAAAAGCCTGTCTGCGCTGTAGGAATGTGTGGTGAAGCTCAATTTCTGTTTATGAAACCTGTTTG  
20 GGCGGGGGTCTGGGGGTTGCACAGAGAATGAGTTCTTGTATTTGCGGTCACACAGGTAGTTATGAAA  
TATGTTATTGTACTGTGTAAGATGCCAGCCATTTGATTGTTTGGCTTTTACTTTGTACCTTTTCAA  
GCTTTTGCTATACATCTGGAACCTCAACACATACTGTGTTGTACTTCCTTTTGTAATGATTTTTAATGG  
AAGTTTGACATAACTCTTGTATACTGTACGATAATCTTGGGGGAAAAATATTTTGCATATCAAAAAA  
25 AAAAAAAAAAAAAACCGAGGGGGCCCGCCCCCATTCCCCTTA

>'000203a-062.scf' came from CONTIG 53 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
062.scf"(1>630)

CGGGCGCCGTTAACTAGGTCCCCGGCTCAGCAGACACAGTGTCGTGAAAACCCAGTTAAACCTAAGC  
CAAAATGGGAAAGGAGAAGACCCACATCAACATCGTTGTCATTGGGCACGTAGATTACAGGGAAGTCT  
30 ACCACGACTGGCCATCTGATCTACAAATGTGGCGGGATCGACAAGAGAACAATTGAAAAGTTGAGA  
AGGAGGCTGCCGAGATGGGAAAGGGCTCCTTCNAATATGCCTGGGTCTTGACANACTTAAAGCTGA  
ACGNGAGCGNGGNATCACCATTGATATCTCCCTGTGGAATTTGAGACCAGCAAGTACTATGNTACCA  
TCATTGATGCCCCAGGACACAGAGACTTCATCAAAAACATGATTACAGGCACATCCCCAGCTGACTGT  
GCTGTCCTGGTTCGGTGTCTGCTGGGTTGGNNGAATTGAAGCCGGATCTCCAAGACGGCAGACCCGNGAG  
35 CTGCCTTTTGTCTACACCTGGNNGNGAAAACACTATTGTGCGNNTACAAAGGATNCACTGACACCTA  
TACAGAGAATCAANAATGTTAGNANCACATTATANAAATGCTCACCCGACANACATTGGCCATTTGC  
TGAAGGACAAGCTAACAAGCT

>'000203a-075.scf' came from CONTIG 53 at offset 27;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
075.scf"(41>615)

CGGGACACAGGTGTCGTGAAAACCCAGTTAAACCTAAGCCAAAATGGGAAAGGAGAAGACCCACAT  
CAACATCGTTGTCATTGGGCACGTAGATTACAGGGAAGTCTACCACGACTGGCCATCTGATCTATAAAT  
GTGGCGGGATCGACAAGAGAACAATTGAAAAGTTGAGAAGGAGGCTGCCGAGATGGGAAAGGGCT  
CCTTCAAATATGCCTGGGGTCTTGACAAACTTAAAGCTGAACGTGAGCGTGGTATCACCATTGATAT  
45 CNTCCTGTGGNNAATTGAGACCAGCAGTACTATGNTACCATCATTGATGCCCCCAGACACAGAGACTT  
CATCANAAACATGATTACAGGCACATCCCAGCTGACTGTGCTGCTGCTGCTGTGNTGGNNG  
AATTGAGCCNGCATCTCCAAGACGGCAGACCCGGAGCTGCCCTTTTGGCTACACCTGGTGTGAAAACA  
CTATGTTGGCGTTACAATGGATNCACTGACACCTTANCAGAGAATCAANAAATGTAGAAGCAGACTAT  
TAAAAATGCTCACCCGACAGACTTGGCCATTTGT

>'000203a-063.scf' came from CONTIG 54 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
063.scf"(10>605)

GCTCTACTATGGATCCCCGGGCTGCAGCGTCACTTACCTCACTCGTTCGGAGTCGTATATCGGGGGA  
AATTGCTACATTCTGTACGGGTCACGTGATGCAACCCTTCTGCTCTGGTACTGGAATGGAAAAAGCAG  
55 TGGTATTGGAGATAACCCGGGCAGTGAGACTGCCACTCCGCGGGCCATTCTGACAGGCCACGACTACG  
AGATCACTTGTGCTGCTGTCTGCGCGGAGCTCGGCCTCGTGCTAAGTGGCTCCAAAGAGGGGACCATGT

CTCATACATTCCATGAATGGNAGACTGNNTAGGGACTTGNAGGNTCCANAAAACCTGCCTGAAACCAA  
ANCTCATTANGCGTCGAGAGAGGCCATTGTGTCAATTTTATGAAAATGGGCTCTCTGCACATCATGTA  
ACGGAAAGCTCAGCCACATGGAACGACATACATAAGGCATCACTGACGGNATGGCAGACTGCTCACG  
GAGAACAGGGGGGCTCAGTCTGCGGGTCGACTAACATGTCGCTACAGTGGAGCGGATCGGCTGGCTGCT  
5 AACAAGGCGCTGTGCTCCTAGACACGTGTTACATCACGGGACCAACACCCT

>'000203a-064.scf' came from CONTIG 55 at offset 0; 'E:\SEQUENCE\export\EST\_db\000203a\000203a-  
064.scf'(44>603)

GCACGAGGCCTGGACCCCCTGGTCCCCCAGGTCCTCCAGCGGCGGCTACGACTTGAGCTTCTCTGCCC  
10 CAGCCACCTCAAGAGAAGGCTCACGATGGTGGCCGCTACTACCGGGCTGATGATGCCAATGTGGTCCG  
TGACCGTGACCTCGAGGTGGACACCACCCTCAAGAGCCTGAGCCAGCAGATCGAGAACATCCGGAGC  
CCTGAAGGCAGCCGCAAGAACCCCGCCCGCACCTGCCGTGACCTCAAGAGTGCCACTCTGACTGGAAG  
ATGCGAGATACTGGATTGACCCNACCANNNGCTGCACCTGGATGCCATTAANNGTCTCTGCACATGGA  
ACCGGTGAGACCTGGTATACCCACTCAGCCANGTGGCCCATATAACTGTATATCACAGAACCCAGTAA  
15 AAAGCACGTCTGTACGGGAGACTGACGGCGATTGAGTCGATTGCGGCAGGGTCGACTGCGAGGGCAT  
CATGATTCTGGCTGAGNCACGAGCTCAAATACTACATGAGACAGGNCTATGACACAATGCACTAAA  
GCCGTCTCAGCTCAGATGA

>'000203a-066.scf' came from CONTIG 56 at offset 0; 'E:\SEQUENCE\export\EST\_db\000203a\000203a-  
066.scf'(39>329)

GTCTCAATGTCCGTGGCGCTGAGGCAAGCGTTGTGGGGGAGAAGGGTAGCGACTGTAGCTGCCGTTTC  
CGTTTCCAAGGTTTCGACCAGGTCGTTGAGCACTTCCACATGGAGGCTGGCACAGGACCAAACTCGAG  
ACACGCAACTCATAACAGTTGATGAAAAATTGGATATTACTACTATAACTGGTGTTCAGAAAGAGCAT  
25 ATCAAACTAGAAAAGCCAGATCTTTGGTCTGCTCGNCATACATGCAGTCTGTAGTTAACAAACACA  
AGAATGGAGATGGAGGTTG

>'000203a-067.scf' came from CONTIG 57 at offset 0; 'E:\SEQUENCE\export\EST\_db\000203a\000203a-  
067.scf'(45>669)

GCACGAGTGGCGGATGACGCCGGTGCTGCGGGAGGGCCCGGAGGCCCGGGGGCCCCGGAATGGGAG  
30 GCCGCGGTGGCTTCCGCGGAGGCTTCGGTAGTGGCGCCCGGGGCCGGGTGCGGGCCGGGGTTCGGGG  
CCGGGGCAGAAGCCGCGGAGCTCGCGGAGGGCAAGGTCGAGGACAAGGAGTGGCTCCCCGTTACCAA  
GCTGGGGCCGCTGGTCAAGACATGAAGATCAAGTCTTTTGAGGAGATCTACCTTTCTCTCTGCCTATCA  
AGAGGCTGAGATATTGACTTTTTTCTGGGAGCATCCTTGAAGATGAGTTTGAAGATTATGCCGGGC  
AAAACCAGACCCGGGCTGCCAGGAACCAAGTCAAGGCGTTGTTGCTTTCGGGGATACAACGACTGGG  
35 GGCTGGTGGCAGGCCCAAGAAAATACCCTGCCTCCGGGGGCCATCTTCTGCTAAGTGTCCACGCCCGG  
GCAAGAGCTTAGGGGAACANAAGACACCCCCCGTCTGCAGGGACGGCTGGGTCCGGCGGGCCCTAC  
CTCCAAGACGGCTCCTCGCCCGGCCAAACGGAGAGCGCTGACAGTCCCTGCCGGCGCTGCCCTGGCA  
TCCAGCCTTGTCTCCA

>'000203a-068.scf' came from CONTIG 58 at offset 0; 'E:\SEQUENCE\export\EST\_db\000203a\000203a-  
068.scf'(40>680)

TTTTTTTATGGCTTCTTCTTTTATTGACGCTTTGTAGATGTCACGCAGGTCTAAAAGTTACACCGT  
TAAATAATTATTTAAAAACCAACCAGGATTAAGGCCCTGGCCCAGAGCTCCAAACCAGAAGCAGAAA  
GGAATGGTGGCGGTGGGCTGGGGGGGTATTCTTCCAACATCACAAAACCCAGAGAACGAGGATCCT  
45 AAGCTTTTACAGGCCAACCCGGGCACGGGCCTGCAGGCTGACCCTCGGAGGCCTCTGGCTGCATCAC  
TATCAGATCAAAACCAGCGAGGAGCTGCCGGGAACAGCCAGCCGAGTCCAGACATGGACACAGTAGC  
TGGATGGACACGAGACGGACAGGTCCTGTCCAGCTGTGGACAGGATTGAGATGCAAGCTAGGCAGTG  
GGGGCAGGGGCTGGGGAGCAGAATGAAGCATGCAGGAGGGGGCCCCGGGGCCTGGCTCANCCACCGG  
CCGCCGAGCCTCACCGTGTGGGNTCGCTGGGGNCTGGGCTCCCGCCCACTGGACTTGAGGCTCTGN  
50 AGCGAGAGTTCCAGCCATTGTGATGTTGCTCTCACAACAAATNCTTGCCACTGGGAGAATTGAGATGG  
TGACAAACTACGCCCCAAGCATGTGGATGCCAGC

>'000203a-069.scf' came from CONTIG 59 at offset 0; 'E:\SEQUENCE\export\EST\_db\000203a\000203a-  
069.scf'(12>643)

CTCTATACTAGGGATCCCCGGGCTGCAGTAATTCGGCACGAGGCTCGGTTTTTTTTTTTTTTTTTGCTC  
55 TAATTAAAATTTTATTGAAATCTCTCAAACGTTACCAAGAAATAGTTTTTGCAAAAGGGAGGGAAGG

GAAAAAACAACAACAACAACAACAACAACAAGCAAAATCAACATGGGAGCTCCCTCTGCTG  
GTCTGCAGTAGGTTGATATGTTACAAACACATTCCCAGAGACAAATCTATTTGCTGGAGAAGGGACAA  
AAAACAGGTGTGTGGGCTTTGCCTCNAGAGAGAACTGGCATGCAGNGAGCGGGGTAGTGAAAGCA  
GAGGAGCAGCGCAGCGCTAAGTCGCTGGTACAGAAGTACGGGGCCACACTCAGGCTATGNGTAAAGGC  
5 AGCCTGTGACTCTATGTCTCTGCATGACTGAGACAGGTGGCAAGNAACTGGGTTGGAGCCTACTATTG  
TCTTGCTCTCGGGTTGCTACAACCTATGTAGGTTGCGATTAGACGACGAGCCTCAAGATTTGCGCTTTG  
TTGACATGCAATGCAACTAGCTGTATTACTTTAAACTTTACCTATGTGAAAAATAATCCGTGATCAAG  
GAAGGCCAAAAAACTCTTT

10 >'000203a-070.scf' came from CONTIG 60 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
070.scf"(19>728)  
CTACGGCATCCCCGGGCTGCAGGTCGAGTTTTTTTTTTTTTTTTTTTATGTTAATTACTTTATTACATTT  
TAGTGCTTTCTTAAAAATAAATAATAATAATTATCAAACATACAGTGAGAAGTAAAGCACACGTG  
TGAACGGCATGTCACAGGAGTTCCTCAGGACTGTTTCAACACTCAGCACTGGAGAAACCGCACAGGC  
15 CTACCTATGTACAGACGACCCAACCGCCAGGGCGAGGCCACCGCGTCCCCTCCGTCTCATGGACACG  
GCCACTCCCCCTTGCGTTGAAATGACCAGTTTGCATGTTTAACTTTCTCTCCGTTGAGCTTCAGTTTT  
TTTTTTTTCTTTGCACTTTTGAATAAATCAAGTAACACTCCCAAGAAAAAAAAGTGCAACTAATA  
AGGGACTCAGAGTCCGGCGCCGGTCAGGGGCAGCGCACAGCGGGGGGGCAGCCGGCCGAGTCTGTCC  
CGGAACACGGGGCGCAGGACCCCGCCACTCGAGGAGGGGGGGACGAGGCCGCGCCTGGGTCCAAA  
20 GCGCCAGACCTTTGTTGAAAGCAGCACAGCCCGCAACGAACGCAGTCCGCGGCCGACTTCGGACCA  
AGGAAGGAGAGGGGGAAAAATAAAGTATTAGGATCCTTTTATAAAATATAAAATTTTCAAATTTTAT  
AAAGGGCGCCCCGGGGGGGGGGGGCCCC

25 >'000203a-071.scf' came from CONTIG 61 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
071.scf"(38>713)  
TTGACATCCTCCATTTTCGCTGTGCTGAGTTAGTACAGGGAAGACGGGGAAGTGAAATGCCAACAGTAG  
TAGATGGGGGACTTCCCTGGTAGTCCAGTTGTTGAGACTTCGCTTCCAGTGCTGGGGGGTGCAGGTTT  
AGTCCCTGATGTGGGAGCTAAGATCCCTCATACCTCATGGCCAAAAAACAGAATGTAAACAACAGAT  
ACAATATTGTAACATATTCAATAAAGAATTAAAAAAAATTTTTTATAAAATATACTTAAAAAAA  
30 CCTGACAGTTTACAGAGAGGGCTGTGATAGGATTGCTCATGAGGAAATCCAAGGAATAGAAGTTTTT  
GATAGAGGATGATGGGAAGTGTGTTAGCAGAAGTAGGACTGCCTACTGTCCATCTGGACCATGNAAA  
GCACANATTATCCCGCACAGCTTGGAGAGAATGTCTCACTAAGAGCTCATGCCTTGTATTCTCCAC  
ATTATTGTATTGTTGGTTTTATATACGTTTTTTGCTGATATTACCATATTAGGTTTGTGTGATGATTGT  
AGGACATTCTATGTAGAGAAAGATAAACTTAAAAAAGAAGCCCTTTTCTTTTTTTNTTAAATAATGC  
35 ATCTTAAGTGAGTCAACCTTTTCGGCAAAAAAGAGAACACTTTACTTATTACTATTTCTT

>'000203a-072.scf' came from CONTIG 62 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
072.scf"(38>334)  
CTGGTGCTTTTCGGCCTCGCTGCGGTGCCGACAGTCCGTTTCATGCCTCGCGTTTGAGGGCAGGGGGTGG  
40 CTCAGCGGCTGGCTCGCAGCTTTCTCCGCTGGCTGAGGCCCGCCACAGCCGACATGGGCTGTTTCTGCG  
CGTTCCGGAAGAATTCTATTGCGAAGATTGCTTCTGAATGAATCCAAGTTAACTCTCACCACCCANC  
AAACAGGCATCAGAAAAATCACGAAAGGGCTCATTGTCTTGAGCACCGTATCCGCCACTCAACCTGG  
GGAGGTGAGTATTTTGGCTTGC

45 >'000203a-073.scf' came from CONTIG 63 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
073.scf"(1>639)  
CGGGGCGCCCTCTAAACTATGGATCCCCGGGCTGCAGGCCAGTTTCCCTCCCAGAACATTCTTGGGA  
CCAGCCACCTTTCCCCAGGTGTGTGCTGCCCACTGCCACCCAGAGGTGGGATGGCAGGTTCCAGGTTT  
CCTCTTGATCCCAGGCTTCCCCTGACATCAGACCATTCAGTGGTTTTCTGGCTCCATCGCTATCGCT  
50 TCATGCTGAATGGACAGGACTGTTGACCTGTCTCAAGAAGCCATAAGATTTGAGCAGAAACGNTGAC  
TTCCTTGTACCTCTGCCAGAGCAGTCCCTTCTCCCCCCCAGAAATTCACCAGATCTCTTCATGCTGCTC  
TTNATTNCGTACTTGAAGTGGNTCTGCCGACAAACAGCAGACTTTGTGTGTCCCACTCTGACTTGCAG  
GACGGNAGNTTCTTTCTTAAAGTTGATCGCTTCTGCTGTGACTGNCCCGCTGGNGAAAAATGGTTTTG  
CCTCGTTTTAAGTGAACAGGAGACTAGATGCTGTACTAAACAGATGGAACCGAGAGAAACACTACCAT  
55 CAGTAAAGACCACCCACCACTATAAACGCTAACAAATCTGCTGAAAGATGTAGCTGGAAAAA  
AAAACGGGGGCCGGCCACCTTA

>'000203a-074.scf' came from CONTIG 64 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-074.scf"(1>580)

GCGGGCGGCTCTAAACATGGATCCCCGGGCTGCAGGTTCTGTGTCGTCTTGGAGGTGACTCGGCGT  
GATTGAATTTGCGGCATCTTCGCATTCACTCACAGGTCAAAATGCAGATCTTCGTGAAAACCCTGACC  
GGCAAGACCATCACCTGGAGGTGGAGCCAGTGACACCATCGAGAACGTGAAGGCCAAGAATCCAG  
ATAAGGAAGGCATTCCCCCTGACCAGCAGAGGCTCATCTTTGCCGGCAAGCAGCTGGAAGATGGCCGC  
ACTCTNTCTGATTACAACATNCAAAAGAGTCGACCCTGCACCTGGNCCTNCGTCTGAGGGGGGNATGC  
ANAATTTTCGGAACCCNNTGACGCAGACATCACCTGGAAGGGAGCCCANGACACCACGANAACGGAA  
GCCNAAATCAGATAGAGGCATNNCCCCGACACAAGCTCATCTTGCGCAGCACTGGAGAGGGCGCTCTT  
TGATACACANCAAAAGGCGACTGCCCGGCCTCGCGAGGGGGAGCAATCTCGAAACCGACGCAGACAT  
ACTGAGGGGGCAGCACACCAAAGAAGCAAACAAAAAAGA

>'000203a-076.scf' came from CONTIG 65 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-076.scf"(45>598)

GCACGAGGCCTTCATCCAGCACCTTCCCCTGAGTGAGCGCATCCGGGGCACCGTCGGACCAAAGAGCA  
AGGCAGAGTGTGAGATTCTAATGATGGTGGGCTGCCCGCTGCTGGCAAACACAGTGGGCCATCAAA  
CATGCAGCCTCCAACCCCTCCAAGAAGTACAACATCCTGNGTACCAATGCCATCATGGATAAGATGCG  
GGTAATGGGCCTACGCCGTACGCGAAACTACGCCGGCCGCTGGGACGTCCTGATCCCAGCAGCCACTC  
AGTGCCTCAACCGTCTCATCCAGATTGCTGCCCGCAAGAAAGCGCAACTATATCCTANATCAGACAAAT  
GTTTATGGGTGAGCCAGAGACGAAAAATGAGACCATTTGAAGGCTTTCAGCGCAAAGTATTGTATTT  
GTNCCNACTGATGAGACTGNAAGACGAACAATAAGCGACTGACGAGAAGGAAGGAGTCCNANACAC  
GCGTCTTAAATGAAAGCACTTCACGTGCCGATGTGGGACTTCTGGAGAGNGCTGTATGAGCTGCAG  
GAAAGGAGCGAC

>'000203a-077.scf' came from CONTIG 66 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-077.scf"(46>306)

CACGAGGGGAATCTTGTCCTTCCAGGTCCGCCAGTTTAAGCGCCTTTATGAACATATTAAAAATGACA  
AGTACCTTGTGGGCCAGCGCCTCGTGAACATGAACGGAAATCCGGCAAACAAGGCACATCACCACC  
ACCTCCACAGTCGTCCCAAGAATAAAGTGGTTGTCTCCACTACCTTGGCCTTCCCCTTGCTTCACGTG  
TCCTTTTTTGTGGACTTCTCTCTCTGGAGATTTCCTCCAGTGATCTCTCAGCGTTGTT

>'000203a-078.scf' came from CONTIG 67 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-078.scf"(39>281)

CTAGTCTGAGTTTTTTTTTTTTTTTTTTTTTTTTTCTGTACTACTATCACTATTCTCAGGTGGGTTT  
TTGAGAATGAATGTGCAGAGTTTATGATGTGTGTCAAGCATGCCTCGATAGCCACAGGCTTTACAAAA  
ATTACCTATTGTTTGCTTCTTTGGATTGACATGCAAAATCTGTTTCATGATTCTCACACTCACGACAGAA  
AACAAATTTTTTATGAATCCATCCACCATGCTT

>'000203a-079.scf' came from CONTIG 68 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-079.scf"(16>24)  
ACAGGGATC

>'000203a-080.scf' came from CONTIG 69 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-080.scf"(38>623)

NAATTCGGCACGAGGCAAGCGCCTGCTGGAGCCCCCGTGCTCCTTGCACTTGAACCTCTATGGGGTTTG  
GTGGGCAGAGGCTCAGGAGTCCCCTGGATTTCCCAGCTGGTATCCTGGGACGTGGTAAGCCTTGGGG  
CTGGGGTAGCATGGGATCCCCGAGGACCCANATTCTGGTACTNAGGGCAAGGNGAGGNGAACCCGN  
ACCTCANCCGTCCCCAGTCTACAGCCTGAGCCAGTGTGCTCCAGCTCCCCANTCCNCATGAAGCCT  
GCCGGNGGCTGGCAGNAGGGNTTAGAGGNNCTGGCCTTCGATTCCCTTTTCTGTCGCGCTGCTTTCACCC  
GCTTCTGCAGCTTTGCTCTGGCCTGATGATCGTGCTTTGTTCTCTGTACTGTAACTGAGCATGCCACA  
TTTGTTGAAATGTTGTTCAAGTGTAAGCAAGGAGAGGTCCAATTGTGATGGGGATGGAGGCATGGACT  
CTGCTTCTATCCTTCTACTTATCTGAAATGTTGCTTCTGCTGTTGGATTATTATACAGGGCAACCTATAC  
AGCGAAAAAAAAGGCAAAAAAATTCTCTACCACGAGA

>'000203a-081.scf' came from CONTIG 70 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-081.scf"(41>563)

CTCCAGTTACCTCTGCCAGTACCGCTGTGTCAACGAGCCGGGCCGCTTCTCCTGCCACTGTCCACAGGG  
CTATCAGCTGCTGGCCACGCGCCTGTGCCAAGACATTGACGAGTGTGAGTCGGGTGCGCACCAAGTGTGCT  
5 CTGAGGCCCAGACTTGTGTCAACTTCCACGNGGCTACCGCTGTGTGGACACCAACCGCTGTGTGGAG  
CCTTACGTCCNAGTGTCCGACAATCGCTGTCTCTGTCCGGCCTCAACCCCTGTGCCGGGAGCAGCCCT  
CATCATCGTGACCGTATATGAGCATCACCTCGAGCGGAGCGTACCGCGGACGTNGTTNCAATCAANC  
ANCNNTCGTCTACCTGTGCTACATGCTTTCAATCGTGCTGTAACCTCGCAGGAACTCTACATAGCAATCA  
10 CATGCACGCTGCTGTCTCGCTCGGCTGGACGGCCCCGGATACGGCTGACTGAGAGTCACTTACTCTCTG  
ATACGGCACTCTTTTGAATACGCTTGGGGCTACTTTGGGGGGG

>'000203a-082.scf' came from CONTIG 71 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-082.scf"(48>533)

GCACGAGGGCCTGCTGCAGCCCGGCTGCCAGCTGGAGTCCCTGTGGGTGAAGTCCTGCGGGTTTACGG  
15 CCGCCTGCTGCCAGCACTTCAGCTCTATGCTGACCCAGAACAAGCATCTCTTGGAGCTGCAGCTGAGC  
AGCAACCCGCTGGGCGACGCGGGCGTCCACGTGCTGTGCCAGGCCCTGGGGCCAGCCGGCACTGTGCT  
GCGGGTGTCTGGGTGGGCGACTGTGAGCTGACGAACAGCAGCTGTGGCGGCCTGGCCCTCACTCTGC  
TGGCCAGCCCCACCTGCGGNAGCTGGACCTGANNCATACGGNCTGGGCGACCCCCGCGTCTGCAGCT  
GCTGGGGCAGCTGGAGCACCCGCTGCAGCTGGAGCACTGTCTGTGACTCTATGGACCGAGCATGGA  
20 CGACGCTGCGGCTGTGGAGAAAGCAGCTGGNCTGCGATCTTTCTGACCCGTCCCCAGNGCGTNATGAA  
AAGTNCATCA

>'000203a-084.scf' came from CONTIG 72 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-084.scf"(47>388)

GCACGAGGCACAGTAGCATCACTTCAGAAAGGAGCCAGACTTATTCTCAAAGAAGTATGTTACACTT  
25 TTCAGCAGAAATAGCGATGGTTGTAACATATGTATCCCCTCCCTCGGATTTGAAGGCACAATCTACAG  
TGTTTCTTCGCTTCTTTTCTGATCTGGGGCATGAAAAACCAAGATTGAGATTTGAACTATGAGTCTCCT  
GCATGGCAACATAATGTGTGTACCCGTACAGCCAAACAGCCAGCCCTGAACGGTGGNTTTATTACTTG  
30 TGTATTTGTGTTGGATGATAAACACTCATCTCTCCTGTAGTCCCTGCTCATTTCACCTAACCCCTAN

>'000203a-085.scf' came from CONTIG 73 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-085.scf"(9>658)

CGCTCTATACTAGGGATCCCCGGGCTGCAGAAATTGGCACGAGGGGAGCTCCGCATCCACACCGGCCAG  
35 CCCAGATCCCCAGGTCTGACAGCGCCCGGCCAGATCCACAAGCCTGCCAGGAGCCAGCCGAGAGCC  
AGCCGGCCGCGCGCTCCTACCCCAGCAGTCTCTGTCTTCGGCCTGAGCCCCGCGTCTTCCCGGGACC  
TCTGCCCTCGGGCAGTGCTGCCACCCTGCCGGCCATGGAGACCCCGTCCCAGCGGCGCGCCACCCGC  
AGCGNGCGCAGGCCAGCTCCACCCCGCTGCCACCCACCCGCATACCCGGCTGCAGGAGAAGAAGA  
CCTACAGGAGCTCAATGACCGNCTGGCTGTCTACATCGACCGTGTGCGGGCGCTGGAAACGAAATGCA  
40 GTCTGCGCCTCGCACACTGATCTGAGAGGGGGCAGCCGGAGGGTCTGGCTTAAGCCCGCTCCAGCCGA  
CTGGGGAGCCGCCAGACCTGACCGTGGNCAGACGCGCCGCGCGGACGACAAGGGAAGAGTCAGG  
ACCAGCACGCATCAAAGAGGAACGAGGCCAGCCGCTAGACGAGGCGTCACCAGAGCGGCGGCTGTT  
AGAAGCCGGGGGACGGACGGGGAGGCATGGGGCCCGGGGCAAC

>'000203a-086.scf' came from CONTIG 74 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-086.scf"(48>633)

GCACGAGGATGAATTTTCACTGGCCCTTCGGCATCTGGTTGTGCAAAGCCAATTCCTTCATTGCCAGT  
45 TGAACATGTTTGCCAGTGTCTTCTCCTGATGGTGATAAGCCTGGACCGCTATATCTACTTGATCCACC  
CGGTCTTATCTCATCGGTACCGTACCCTCAGGAACCTCTGATTGTTATTATAGTTGTTGGCTTTTGGC  
TTACTAATGGGTGGGCCAGCTCTGTACTTCCGGGACACTCTGGAGTTGAATAACCACTCTTTGCTA  
50 TAACAACCTTCCATGACATGATGTGGACCTCAGGTTGNTGAGGCATCATGTTCTGACCTGGGAGAAAG  
TTATTGTTGGGTACCCTCTCCCTCTGCTAACAAGAGCATTGCTACTTGGCCTCATCTCAAGAGAAGAA  
CGAGCACCTGTACTCAGAAGCCTCCTGACCACCCGGCGNGNCATGCCTTNCGATTGCTGAATCCTAT  
CACTGTTACATTGGAACACGACCACACATACTATTACCAAGCTACAGCACACCCCTTACGCCGNG  
55 TTCTCAAATGCTGACCCCCCTTACCCGATATAAAAAG

>'000203a-087.scf' came from CONTIG 75 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-087.scf"(46>645)

GCACGAGGATTTAATATTGTGGAGGGTGGGGCTTCCAGGTGAATACAGTTGCTGGTTGCTGAGCCATG  
 CCCAACTCTTTGCAACCCCATGGACTGCAGACCGCCAGGCTCCTCTGTCCATGGAATTGTCCAGGCAA  
 5 GAATACTAGAGTGTGTGGCACTCTCTTCTCCAGGGTATCTTCCGAATATAGGGATCAAACCTGGATCC  
 CCTGGATTGCAGGCAGATTCTTTATCCTCTGAGCCACCAGGGAAGCTCCTAGTCACCCTAAAACCTCCA  
 AATTCTTAAAAAAATTACCCTATCTACTTCCACCCAGTCTTTCTCTCTTCTTTTGGTGTCTTGATTT  
 TTGCTTTTGGCTCTGCCACTGCATCACATCACCTCTTCCAGCCTGACTATGAGTCGCCTCAGACTCAGA  
 GCAGTTCACTCACGAATCTTGGCTTGACCACATACTCTCGNACTTGGCTCTGACTGCTTTTTTTATTGTT  
 10 ATTCGACATCTCCACCCGCGAGATCTTTGGACAGCCTTGTATAACATCTGTTATACCTTTTGTACGCT  
 ATTTGGGAAAAATAATTAAGAGGGGCTCCCCCAAAAAATTACGCAA

>'000203a-088.scf' came from CONTIG 76 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-088.scf"(19>21)

15 TAT

>'000203a-089.scf' came from CONTIG 77 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-089.scf"(1>428)

AGGTGGCGGCGCTCTTATTATGGATCCCCCGGGCTGCAGAATTCGCACGAGGGAGGCCTTTTCGGCCGC  
 20 AGCCATGGCGCCAGCCGGAATGGCATGATCCTGAAGCCCCACTTCCACAAGGACTGGCAGCGGCGC  
 GTGGCCACGTGGTTCAACCAGCCGGCTCGCAAGATCCGTAGACGCAAGGCCCGGCAGGCCAAGGCGC  
 GCCGCATTGCCCCACGCCCCGCGTCCGGTCTCTCCGGCCGGTGGTGAGATGCCCGACGGGTTCAGTAC  
 CACACGAAGGTTCTGTGCCGGCAGGGGCTTCAGCCTGGAGGAGCTAAGGGTGGCCGGCATCCACAAGA  
 AGGTGCCCGGACCATTGNNGATCTCGTGGACCCGNAGCGCGGANCAAGTGCACGGAGTCCCTGCAGG  
 25 CCACGTGCAGCGCTCAAGGAGTAN

>'000203a-090.scf' came from CONTIG 78 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-090.scf"(42>591)

NAATTGCGCACAGGGGAAGTGTATAATTTCTGGCCACTGCAGGTGCCAAGTACGGCGTGGGCTTCT  
 30 GGAGGCTGGCTCTGGAATCATTACCCAGATCATTCTGGAAACTATGCGTACCCTGGGGTTCTTCTGA  
 TTGGCACTGATTCCACACCCCTAATGGCGGTGGCCTGAGAGGCATCTGCATTGTAGTCGGAGGTGCT  
 GATGCCGGGNACGTACGACTGGGATCCCCTGGGAGTTGAAAGGGCCCCAGGTGATTGGGCGTGAAG  
 CTGACAGGCTCCCTCTCTGGCTGGACCTCACCTAAGATGTGATCCTGAAGGTGCGGGTATCCTCACAGT  
 GAAAGGTGGCACGGGCGCCATCGGGNAGTACCACGGGCTGGAGTAACTCCATCTCTGCCCCGCGATGC  
 35 GACCTCTGCACATGGTGCAGAATCGGCCACACTTGTGTTCCCTACACACAGAGAANAATACTGACAGA  
 CGGCGGCAATATGCACCTGTGAGATTAAGATACTGTACTGCTTGCTGCCTTTACAATTATATTACCTAG  
 GCGA

>'000203a-091.scf' came from CONTIG 79 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-091.scf"(41>338)

TAATTCGGCACGAGGCCCCCTTTCATCACCAACCCTGGGTATGACACTGGAAACGGTATTCATCTTCCCC  
 40 GCACTTCTGGGCAGCAGCCAGTCTTGGGCAACAAATGATCTTTGAGGAACATGGTTTTAGGCGAACC  
 ACACCGCCACCACGGCCACCCNCGTAAGGCATAAGCCAAGACCGTATCCGCCGAATGTAAATGAGG  
 AGATCCAAATTGTTTCATGTCCCCAGAGGAGACGTAGACCATCATCTCTACCCTCACGTTGTGGGACTC  
 45 AATCCAAATGCTTCTACAGGCCAAGA

>'000203a-092.scf' came from CONTIG 80 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-092.scf"(47>391)

GCACGAGGCAGCCGAGGACAGCCAGCAGGACCTGCCTGGGGAGCGCCACGCCCTCCTGGAGGAAGA  
 50 GAACCGGGTGTGGCACTGGTGGCGCCACGGACGAGGTGGACGAAGGCAAGTCCAAGTGCGGCAGC  
 GTGAAGGAGAAGGAGCGTACCAAGGCCATCACCGAGATCTACCTGACCCGCTGCTGTCCGTCAAGG  
 GCACGCTGCAGCAGTTCGTGGACAACTTCTTTTANNAGCGTGCTGCGCCCGGGAACCGGTGCCACCG  
 GCGTCAAGTACTTCTTCGATTTTCTNCTGNACGAGCAGCAGAAAAGCATGACATTANAGATGNANGACA  
 55 CCNATTNC



>'000203a-093.scf' came from CONTIG 81 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-093.scf"(44>356)

CAAAAACCGAAGTGACGGGAGGTGCTGCGCTCCCCTGCGTCGTGGCAAAGTCAGCTGGCCTCTTGTG  
TGTGCGTGTGTGCGTGTGAGGAGCCGAGTGTGGGTGTGTGGCGGGCGTGGGAGCAGCTTTCTCACATA  
GTGCCTTATACACGCTCTAAAGAAACCAAGTCTTACATGTTAAGAAACAACCAAGTGTACATTTTCTACAC  
TACCTTNCATTTTCAAGTAGCTTTGATGACCAGTTTTCAGTTTCATGGAGGAAATCATGGNNGCGTCCCAA  
GGGGCTCCCCATGCCCCGAGAGCCGACTGGTTCNTGTGACG

>'000203a-094.scf' came from CONTIG 82 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-094.scf"(40>373)

GGGTTTTTTTTTTTTTTTTTTTTTTGTAATAAATAAAAAAGTTTATTAACAAGGAATGCACTTTTCCAGCCAC  
AAGTGTCTTCAAAAATTAACAAAACAAAAAATATATATATGGCCATAGTTTACAGTTAAGCAGCCA  
AAAGCTGCTCCAATTATAGCCTTTAAACAACATGTGAGCATCCTCCCTTTCCCTCCCTTCAGTAAGTA  
TATTCACAGCTTCAAGTCTCTGTCCGAAGCACTCTCCACAGAGAGAAGTTAAGAGTCAATGCACCTTT  
CTGCAAAATTGTCTGAAAAGCTTTANNAACAGTACGTCAAGGAAACTGCTTCGGNTC

>'000203a-095.scf' came from CONTIG 83 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-095.scf"(42>489)

CGACAGCCTAGAGGGCTTCGTGCTGTGTCACTCCATCGCTGGGGGAACAGGCTCTGGCCTGGGCTCCT  
ACCTCTTAGAACGGCTCAACGACAGGTACCCCAAGAAAGCTGGTGCAGACATACTCAGTGTTCCTCAAC  
CAGGATGAGATGAGCGATGTGGTGGTCCAGCCCTACAACCTCACTGCTCACGCTCTAGAGGCTGACCCA  
NAACGCCGACTGTGTGGTGGTGTGCTGGACAACACTGCCCTGAACCGGATCGCCACAGACCGCCTGCACA  
TCCAGAATCCCTCATTCTCCCANATCAACCAGCTGGTGTCCACCATCATGTGAGCCAGCACCACACCCT  
GCGCTACCCCGGTACATGAAACACGACCTCATCGGCCTCATCGCCTCGCTTATCCACGCCACGCTNC  
ACTTNCCTGACTGTTTCACCCCCTCCACAGNACAGCG

>'000203a-096.scf' came from CONTIG 84 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-096.scf"(43>460)

CATCAGGCTCGAGGGCTCTGTTGTGCGGACTGCTCCCCCTGGACCCTCTGGTTTCTCTGGGCCCTCTGA  
CCTCTTTGATCCTGCTGGTAAAGAAGGGCTTCGTGGGCCTCGTGGGGACCAAGGTCCAGTTGGTTCGAA  
GTGGAGAGACAGGTGCCTCTGGCCCTCCTGGCTTTGTTGGTGAGAAGGGTCCCTCTGGAGAGCCTGGT  
ACTGCTGGGCCCTCTGGGACCCAGCCCAAGGCCTTTTGTNGCTCCTGTTTTTCTGGGTCTCCAG  
CTCTACAGTGAGCGCGACTACACGTGTGCTGATCTGTGGAGGGGTTGACACCTCTTTTCTCGTTACAT  
ATAAAAATGTAAACCTGCCTTAACTGGACATATGACCTGATACTCACTTATATTTTTTCTGGCTTTCTTA  
ACAAA

>'000203a-001.scf' came from CONTIG 1 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-001.scf"(45>465)

GCACGAGGCTGTTTTATATTCGCCCATTCAGTCCATTTTAATTCTCTGATTCCCTAATATGTTGATGTTT  
ACTCTTGCCATCTCCTGTTTGACCACTTTCAATTTGCCTTGATTCATGGACCTAACATTCAGGTTCTG  
TGCAATATTGCTCTTTTATCATCAAACTTTACTTCTATCACTAATTACATCCATAACTGGGTGGTGT  
TTTGCTTTGTTTTTATTCTCTTCTTTTGGAGTATTTTCCACTGATCTTCATTAACATATGGGGCAC  
CTACCGACCTGGGGGGGTGATCTTTTCATGTCTTTCTTTTGTCTTTTATTCTGTTATGGGGTTTCAAGC  
AAGATATGAAGAGTTTGCTTTCTTTTCCGGGACACGTTTGTGATCAGATCACACAGACTGCCGCTGGGGTT  
G

>'000203a-002.scf' came from CONTIG 2 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-002.scf"(48>297)

GCACGAGGGATTCTTATACTTTCTGAGGGAGTTTAATGACCACTAGAGCTTGTCTCATATTTTTTTTCA  
GCTTAATACTGTATGTCTCGTAAGATGGGCCTTATTGCCTGTATTCTTTGATATGTGATTAAAGCCTATA  
GCTTTCAGTGACCAACATTTTACAGAGTAAAAAATGTTAGGAAGCAGAAAAAGAAAATCTGATTAT  
TCTATGTCTCATTATCCAGCCCTGCACTTAGATAGAAGTGTGC

>'000203a-003.scf' came from CONTIG 3 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-003.scf"(40>551)



TTTTGACAGAGAACATTTTTCTCACATACACTTTCAGAGTCAAAGCTGTGGATGGGGGAGATCCCCC  
AGATCTGCAACAGCCACGGTCTCTCTTTGTGATGGATGAGAATGACAATGCTCCCACTGTCAACCTT  
CCCAGAAATATTTCTACACTTTACTGCCACCTTCGAGTAACGTCAGGACAGTAGTAGCTACGGGGT  
GGCAACAGACAGTGTATGGCATCAATGCAGACCTTAACTACAGCNATGGGGGAGGGAATTCCTTC  
5 AAGCTGTTTGTGAGATTGATTCACCAAGTGGGNGGGTTTTCTTAAAGGAAACTCACCCAAAGCATTATGGC  
TTGCACAGGNTGGTGTGCCAGNGATGACAGGGGGCAGCTTCCCATCTACACGATCTGTGCTGTGTTGTC  
ATGAAAGGTTCTAAGCACTGGATGACTCCCAAAGCAAAACTGCCNCCCCATCACCAGAATATACGGG  
ACCAGCTATAATTACACAAAATAATGTTTGGGGGGGG

10 >'000203a-004.scf' came from CONTIG 4 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
004.scf"(43>365)  
GCACGAGGGCCCTTTGACGTTCCGGCCGCGCGCCCCGCGCCTCGTCGCTATGCCTCGCAAAATTGAGG  
AAATCAAGGACTTTCTGCTCACAGCCCGCCGCAAGGACGCCAAGTCCGTCAAGATCAAGAAAAATAA  
GGATAATGTGAAGTTTAAAGTTCGATGCAGCAGATACCTTTACACCTTGGTCATCACAGACAAAGAGA  
15 AGGCAGAGAAGCTGAAGCAGTCCCTGCCCGCGGTTNGNNCGTGAAGGAGCTGAAATGAACCACGC  
ATGCTGCTTTGAACTGTATTAAATTTTTTAAATTCTCAAAAAAAAAAAAAAAAAA

>'000203a-005.scf' came from CONTIG 5 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
005.scf"(45>563)  
20 GCACGAGGCCAAGAATACAGTCACCTGCAGCCGGGGGACCACCTGACTGACATCACCTTAAAGGTGG  
CAGGTAGGATCCATGCCAAAAGAGCTTCTGGAGGAAAGCTCATCTTCTATGACCTTCGAGGAGAGGGG  
GTCAAGNTGCAAGTCATGGCCAATTCCACGAATTACAAATCTGAAGAAGAATTTATTCGTATTAACAA  
CAAAGTGCGCCGNGAGACATAATTGGAGTCCCAGGCANTCCCTGGAAAACCAANAAGNCGAGCNT  
AGCGTCATCCCCATGAAATCACACTGCTGTCTCCTTGCCCTGCACATGTTACCTCATCTTCACTTTCCGC  
25 TCAAAGACAAGGAACACCGTATCGTCAGAGATACTTGGACTTGATTCTGATGACTTGTGAGCAGAAGT  
TTATCTCCGCTCTNATAATCACGTTTATNAAGTTCTTGNTGAATGGNNATTCTAAATGTAACTCCAT  
GAGAACATCATCCAGGGNAGCTGTGCTAGCTTTACACTACAA

>'000203a-006.scf' came from CONTIG 6 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
006.scf"(47>562)  
30 GCACGAGGGTTTAATTAGTGTACAAGGAGGCTTCAAGAGGGCTTCTGTGGTGACCCCGTGGTAAAGCA  
TCTGCCTACCAGTGCAGGAGACTCCAGTTCAGTCTGGTCTGGGAAGATGCCACACACCCGGGGGAAAC  
TGAGCCCATGTACCACAACTGCTGAGCCTGTGTTCTAGAATCCGGGGAGCTGGCACGAGAAGTCACAG  
CAATGAGAAGCCACACACTACTANAGAGTAGCCACACTCACCACACAAGGCTTNCCTGTGCTCAGT  
35 TGTTAGGAATCTGCCTGCATGGCGGAGACCTGGGTCGATTCTGCTCGGAAGATCCCTGGAGAAGGAA  
AGCTACCTGCCGGAGCCACACGGAAGACCCACCTGACAGTCTGTGAAGAACTGAGAGCAGGGATAAA  
CTAGGATCCTTGATTGTCAACTCTATCAACAAACTCTTCTGTTTTGTTGCTTCACACTTCTGCGTGCA  
AGCTTTCCGCCCCCTTTTNAATAAATAATTTATTATATT

40 >'000203a-007.scf' came from CONTIG 7 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
007.scf"(32>465)  
GCTGCAGGAATTCCGGCACGAGGCTAGTTTCTTGTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTGCCTTTTC  
TTCCACTTTATTTTCATATTTCCACCACAATAATGACTCCTTTAATTTAACTAAAAACCATANAGGGTT  
CCCTGAAATTGTGGCAGCAAAGGAATGAAAGTGTCAAATACCGAGGGACAGGTGGGGTGGGGAATCA  
45 CCGAATCGTCTCACTGGGCTCTTGAAGTTGCTGGCGGCTGAAGCTGCAGCTGGTAGGGCATTGATGGT  
ATCTGAAACCGAAAGCCTGGGCCAACCTGGTGGCGGCCCTTGGCCGGTACTGGGGTGCACATGAAA  
ACATTGAAGGACCCGCGCCGAGAAGCGCCTCCGGGGGGGGGCCTGTTGATTGGGGGTACACCCCTCC  
CCTGGGAAAAAATTTCCATGGCT

50 >'000203a-008.scf' came from CONTIG 8 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
008.scf"(39>747)  
CAAAATGTCTTGAAATGATATTACCATAATTTTAAAGTAGGAAAGTTACCTGAACACTTCTGCTTCCACT  
TAACTGACTGGCCCGCAATATTGTAGGAACAGCATGTCCTTTGTACTGTGGTATTTCAGAACAGCCACA  
GCACTCACTTTTCCAAATGATTCTAGTAATTGCCTAGAAATATCTTTTCTTACCTGTTATTTATTAAT  
55 TTTTCCCCATATTTTATATGGAATAAATTTGATTGAAGATACTTAGTATGCAGTTGATAAGAGGA  
ATCTGTTCTAATTATGTTTGGTGGATTATTTTATACTGTATGTGCCAAAGCTTACTACTGTGGAAAGA

CAACTGTTTAATAAAGAATTACTTCCCAAAAAAAAAAAAAAAAAAAAAAAAAAATAACCGAGGGGGGCC  
CGGTCCCCATCGTCCTATGGGAGCGTTACCATCCACGGGCGGCGCTTACAGCNCGGACGGGAACCCGC  
CGTCCCCACCTACGCCTGCACCCACCCCTTCCCGTGGGTAAAGGAAAACCCACCCACGCCTCCACGT  
GCGCACCGAGGCGAGGAAAGAAGGGTAATTTGTAATCGTAATTTTTATATATTTTTACATGCCAAGCC  
5 ATCCTTAAAAAAAAAAGAAGGGGGGGGTGTGTAAAACTCTTAAAGCCCCGAGAAAAACCTAGGGC  
CCCCCCCCCTCTTTGGGGGCGAC

>'000203a-009.scf' came from CONTIG 9 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
009.scf"(37>606)  
10 TAATTCGGCACGAGGCTCATTTTTCCATCTCTTATGAGGACACACATCACTGAATTTAGGTTCTACCC  
AAGTCCAGAATAATCTCATCTTGAGATCCTGAACTTATCACATTTGCAAATTCAGAGCCAGGGAA  
AGCTGAGCAGTGAAGTGAATGGAACAGGGTTTGCTTCGAGGGTGATGAGAGTGTTACAGGGTAGAC  
AGGGATGCTGTTTGTACGACTCAGTGAATATACTAAAACCCNAGGGATTGCATGCTTTAAAGAAGAAG  
CTTAATGTTTGTGAAATTAGTCTCAATATAGCTGTTATTTTTAAAAGAGCCTGGCTCGGGGAGCCATCA  
15 ATCATACTGCTATTTTTATATCGATGTGCCAGCAGAAGTATCTTAAATCTTTATGACACTGTTTACTT  
TTGGCTGTCTCCACCTGGTTTAAATACATTGAACAGAACCCAGNGAAAGCCTATGGTACAGGGAGAG  
CCCCGCTTTGCCATGAGGGATAGAATTGGTGATGCCAGAGATTCCAAGAATTTGTGAAAAACCACT  
CCGGGGCCGGGTAACCTTCTCCG

>'000203a-010.scf' came from CONTIG 10 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
010.scf"(44>427)  
20 GCACGAGGAGAGAACTAGTCTCGAGTTTTTTTTTTTTTTTTTAACTGAAGGAAAATTTCTTTACAATG  
CTGTGTTGGTTTCTGTCATACCAACGTGAATCAATCATAATTATATTATATCCTGATGGCACATGTT  
AAGAATGCATTTTCTCGTTTGAACATTACTGAGTTGGGAGATATGCAGGTTATGGATTAGTCTCTCTG  
25 TGAATACTGACTTAACTAAAATTCAGAAAGATACAGCCATTTACCTACAGTCTCCAGTTAAAACATGG  
CAGACCTGAGCCTANAACCCAGTTTGCTCATTTTACTCCAGTATCACCCAACCTATACCTAAAATGTT  
CCTCTGCAGATACTATTCAAAGCACTTTATTTATTTCTAT

>'000203a-011.scf' came from CONTIG 11 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
011.scf"(31>278)  
30 CTGCAGAATTGACACGAGCACCCCTCTCAAGACCGAGCTGCTGCGGCCACACTCCTACAGTCTGTGCAA  
GCCCCCGAGTTCACCCCCAAGTCTGGAGGGAAAGAACCATGTCTGTGACCAGCAACTGCAAAGAGCCA  
ATGCCTGTGTGGTTGACAGCCGGCGTGAGATCTCATAGCTACTCTTGCCACTGCCCCGACAGCTCCCTG  
GCTCAAAAATTACCTCATCTACTTGATAAGGATGATGTACACC

>'000203a-012.scf' came from CONTIG 12 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
012.scf"(1>719)  
35 TGATGCCTTCTAATTATGGTTCCCCCGGGCTGCTGGTGAGACCTGTGTATACCCCACTTTGCCCTGTGT  
GGTTCCAGAAGAACTGGTATATCAGTAAGAACCCCAAGGAAAAGATGGCTCGTCTGGTACGGAGAGA  
40 GCATGACCGTTCGGATTTAGTTCGAGTATGGCGGCCAGGGGTCCGATCCTGCCGATGTGGCCATCCAG  
CTGACTTTCTGCGCCTGATGTTACCGAGGGTCTTCCATAACATCACCTACCACTGCAAGAACAAGA  
GTGGCCTACATGGGACCAACTGACTGGCAACCCCTCAAGATGCCCTGCTCCTCCAGGGCTCCAACGAAG  
TACGAAATCCGGGCCGAGGACAACAGCCGCTCCACTACAGCGACACCTAAAATGGCTGCACGATCAC  
ACCGGACCCCTGGGCAAGAAGAGACGAATACAAACACCAAACTCCGCTGCCACATGATGGCCCCCTG  
45 AAGTGGCGCCCATACAGAATTCGTTTCGAGTGGCCGCCTGTTCTGAACTCCTTCCCCACCGCTCCTCACC  
AACCCTGCCCCACTCGAAAACAACCAACGAACCCAAAACAAAAGGAAAATCACAGCTGAAAATTT  
TCTGCTTTCTTAATTTTATTTACACAACTACAACAAAGACACTCAAAAAAAAAACAGGACGCCCCCCC  
TAGGCATAATATCGGTTACGGAGGACCGCCCCCTCCTCCC

>'000203a-013.scf' came from CONTIG 13 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
013.scf"(284>351)  
50 ATGAAGCGTTATATTTTGTAAATTCCGTTATATTTTGTAAATCACCTCATTTTTTACCCATAAGCGC

>'000203a-015.scf' came from CONTIG 14 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
015.scf"(1>680)





>'000203a-065.scf' came from CONTIG 25 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-065.scf"(1>665)

5 GTGGCGCCCTCTAAACTATGGATCCCCGGGCTGCAGGTGGACTACACCATCACTGTCTATGCTGTCAACC  
GGCCGGGGGACAGCCCGGCAAGCAGCAAGCCCGTTTCCATCAATTACCGAACAGAAATTGACAAACC  
ATCCAGATGCAAGTGACTGATGTCCAAGACAACAGCATTAGTGTCAAGTGGCTGCCTTCAAGTTCCC  
CTGTTACTGGTTACAGAGTGACCACTGCTCCTAAAAATGGCCAGGACCATCGAAAACGAAAACCTGTA  
GGTCCAGATCAAAACAGAAATGACAATTGAAGGGCTGCAGCCACAGTGGAGTATGTGGTCAGTGTCT  
10 ATGCTCAGAATCAAAACGGAGAGAGTCAGCCTCTGGTTCAGACAAGCGTTACCCACCATTCTGCACC  
AACCAACTGAAATTNACTCAGTGACACCACCAGCTGACTGCCAGGACGCACCNATGTCACTCACTGGT  
TCGAGGCGGNGACCCGAGAAAGACGNACGAGAAGAATCACCTGCTCTGAACTATCGGTTGTTTCAGAC  
TAGTTGCACCAATGAGGAGGCTTGCTTTAGACCTGACACAACGCTAGGAGGTCAATTGAAAGCACTCA  
AAGGCCGGGAAAGTTGAACACTCCTTATGAACAAATGAAAACGGTCACTGGCTCC

15 >'000203a-026.scf' came from CONTIG 25 at offset 40;"E:\SEQUENCE\export\EST\_db\000203a\000203a-026.scf"(38>628)

AATTCGCACGAGTGTCTATGCTGTCCCGGCCGGGGGACAGCCCGGCAAGCAGCAAGCCCGTTTCCATC  
AATTACCGAACAGAAATTGACAAACCATCCCAGATGCAAGTGACTGATGTCCAAGACAACAGCATT  
20 GTGTCAGGTGGCTGCCCTCAAGTTCCCTGTTACTGGTTACAGAGTGACCACTGCTCCTAATAATGGCC  
CCAGACCATCGAAAACGAAAACCTGTAGGTCCAGATCAAAACAGAAATGACAANTGAAAGCTTGCAGCC  
CACAGTGGAGTATGTGGTCAGTGGCTATGCTCAAAATTCAAAACGAGAGAGTCAGCCTCTGGGTCAA  
CAGCGGAACCACTTCTGCACCACCCACCTGAATTACTCAGNGAAACCAACAGCTGACTGCCAGG  
NACGCACCACTTCACTCACTGTTTCGAGGCGGTGACCCGAAGAGAGACGNACGAGAAAAATCACCTG  
CTCTGAACTATCGGGTGTATAGACTAGTTGCACAAATTAGGAGGCTAGTCTAGACCTGAAGCAACGCT  
25 CAGATGTACATTGAAAGAGCCTCAAAGCCGGGAAAGCTTGAACCTACA

>'000203a-027.scf' came from CONTIG 26 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-027.scf"(30>646)

30 CTGCAGAAATTCGGCAGGAGCGAGTCCTGTTAGGTGCGCGTGGAACCTAGGGTCACTGGCTGCGCC  
CGGTCCAGCGCTCTGCCCTTTTCGACGTGGACGGGACCCTGACGGCCCCGCGGCAGAAAATTACCAAAG  
ACATGGATTGCTTTCTGCAAAAACCTGAGGCAGAAAATCAAAATTGGTGTCTGCGCGGGTTCGGACTTT  
GAGAAAGTACAGGAGCAGCTGGGAGATGACGTTATTAATAAATATGATTACGTGTTTCCAGAAAATG  
GCTTGGTAGCATACAGAGATGGGAAACTCTTGTGTAAACAGAATATTTAAGGTACCTGGGTGAAACC  
CTAATCAAGATATATTCCTACTGTCTGAGCTACATCGCGAAAAATCAGCTCCNGAAAAAAGGNCAC  
35 TTCATAGAGTCCGTAACGTGAGCTGACGTGTGCGCCGACGGAAAAGCTGCAGCAGAANAACCATGTATC  
TACGACTGTACAAAAGAAACATAAAACAAAGTCGGAGNATTGCAAAGATTGCTGTAAGGCTACGTTTCT  
AGAGNCAATCACTTATTCTCCCTAGCTGAACAATACGCTGGAACGGGAAGAAGATAAACTTATTTTGT  
GACAAC

40 >'000203a-028.scf' came from CONTIG 27 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-028.scf"(40>622)

CACGTAGGGGCGACCGCAGGCCCTCTCCCGAGGAGCTGGACAAGGGCATCGACCCCGAGAGCCCCCT  
GTTTCAGGCCATTCTGGACAACCCCGTGGTGCAGCTGGGCCTGACCAACCCGAAGACCTTACTAGCAT  
TTGAAGACATGCTCGAGAACCCGCTGAACAGCACCCAGTGGATGAACGACCCGGAGACGGGCCCCGGG  
45 CATGCTGCAGATCTCAGAACTCTCCAGACCCTGAACCGCACATATGCCGCGCACTGCAGCTGCCAGCC  
CAGAGAGCCTCTTCTTCCAGCCCAGGGGTGGGGAGAGGGTGCAGACCCCAAGGTGCGCCTGGGCTG  
GGGGCGGGGAGCAGGGGGGCGTGGAGGGACCCTGCCCTGGGTGTGGCGCCAGGCCGCACTCCGCTG  
GATCTTCTGGA AAAACTCGGNGGCAGGGCCGGGTGGCTCCACCCCTGACAGGTTACGACAGGCGCCA  
CCGGGAAGGGGGCTCCTTCAGGCCCTGGCTCTGACGTATTGATTAACGAGCGCGCTGGAAGACCTGTT  
50 TGA AAAAGAATGTCAACCAGTTAGGAAGGATAATGGGAAAAAAA

>'000203a-029.scf' came from CONTIG 28 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-029.scf"(35>595)

55 AATTCGCACGAGGTCACTCCCTAAGTGGCCTGAAGATGGACAAGGGAAGTAACAGGCACGTGATGTT  
GGCAAGGATGCTTCTAGGGCTAGAGGATCAGTGGTGGGAGAGAGCTGCAGAATCCACCAGCCAGAAC  
TGCAGATAACGATATCTATGGTCAGGGGCTGTGACTGAGAGAAGGAACTGAGGTTGTGTTCTGAAAG

TACATAAACTCTCACATATACCCAGTTCTTCACCATCTTCCCTCCTCACTTTGCAGNGCCATTTTTTTTTT  
TGCATTAGGCAAATTGCTCAGACTTTCCAGAGCCATGCCCATCCCGTCTCTGGAACCCCCACACCTCTG  
AGAGTGGGATCACACGTCCTGCAGGGCTGCTCCCTCCAACCTACCTTTAGAGAGCAGGACAGGAGCT  
GTTTACCACAAGACAAAATCAAACGAGAGCAGACGGGTAAACAAANAAGACAGGGGCAATGTTTTT  
5 TTGNGTTTTGTTTTTTTTTCCATTGGAGGTGACACAAAATTCAAGCTACAGTTCCCTCTCCCCCCCATT  
TTTTTTAAACAAANA

>'000203a-030.scf' came from CONTIG 29 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
030.scf"(36>676)

10 CTCATCCTACCATATAGATATTGGTACCCTTTATCTACTATTTGGTGCTTGGGCCGGTATAGTAGGAAC  
AGCTCTAAGCCTTCTAATTCGCGCTGAATTAGGCCAACCCGGAACCTCTGCTCGGAGACGACCAATCT  
ACAACGTAGTTGTAACCGCACACGCATTTGTAATAATCTTCTTCATAGTAATACCAATCATAATTGGAG  
GATTCGGNAACTGACTTGTTCCTTAATATTTGGTGCTCCCGATATAGCATTTCCTCCGAATAAATAAAT  
AAGCTTCTGACTCCTCCCTCCCTCATTCTACTACTCCTCGCATCCTTATAATTGAAGCTGAGGCAGAAA  
15 CAGCTGAACCGNGNACCCCTCCTTANNCAGCAACCTACCATGCAGGAGCTNATAGAACTACCATTCT  
TTTCACTTACANGAGTCCTCATTTTAGAGCATCAACTCTTACACAATACAACATAAGCCCCGCATGCCA  
TACAACCTTGTGTTGATCGNATATACGCGACTATATATTGCTCTTTTACACGCACCAGCTTTAAACGA  
ACTATCACTCTCACGCGAGAGAACTTTTTTACATTTTGTGTTTGGCCCGAGCTTTTTTCTGGGGGATTCT  
TTGCCCTCAAAAAACAGTA

20 >'000203a-031.scf' came from CONTIG 30 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
031.scf"(13>195)

25 TACTATGGATCCCCGGGCTGCAGGNAGTTTTTTTTTTTTTTTTTTGTACAAATCAAGCATTTTATTACA  
TAAATAAAAGCAGCACGCTTTTATTTTCTATTTAAATACCATACAGAGATTTAAATCACATTTGGCA  
GTGGACTGCAGGATGCTCAGACTTCACCCACATCACNTTGGATT

>'000203a-033.scf' came from (F3, 033)

no description length

30 779GGCGCCCTCTAAATATGGATCCCCGGGCTGCAGGAATTTCGGCACGAGGCCGGACCGGTGTCTTCT  
CTGGAGGCTCCTCGCTGGTTCGTGGGGGAGCCGGGAGGGCATGGCTGGCTGCCGAAAGAGACTGCGA  
GACGGTGACCTGCTGTCTCTTTTCGGAGCGGGACGCCGCCGAGCTCCCCGAGAAGCCGGCGAACCC  
TGGTCGGGGCGGCCCTAGAGCCAGAGGCGGTGGGCGGGAGCGCGAAGCCCGCTCGCGGGTGTGCTG  
CTGTAGCAGGAACCAAGATGGTCACGATCTCGCTGCTGAAGCGGCTCAAGGAACGCTCGTTGGCCAC  
GCTGCTGGAGGGGGGAGACCCGCGGGGGGGCGGGGCGGCTGCGGGCTGTGCCCGCCGCCACCTCC  
35 CCTGGCGGCCACCCCGCCGCGCACTGGTGTGCGACCCCTCCCTGGCCCACCTCAGCCGCCGGGGCCC  
AGCCCTGGCGGGGTCCACTCCCCCCCCCGAGGCCCCAGGGCCGCACCCACCCCTACCGCTCGGGGC  
CAAATACCGCCCGCTACCTGTTTCCCCGACAACAACACGATTATTATCCCTTGCTAATGAAAAACG  
CCCCCTTTCATCCGGAATCAACCACTGCCGCCCCACCACCTGGCGGGGCTGTACGGCGGGGGGCTCC  
CTCCCCCCCCCATTTCTCTCTTTTTTTTCGTCTCATTACATTTGGGGGCTATATATATAATATATTATTA  
40 TAGATATTATTTTTTTTCTATCTATATTTTA

>'000203a-034.scf' came from CONTIG 31 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
034.scf"(28>623)

45 GGGCTGCAGAAATTCGCACGAGGCTGTCTGCTCGTGGTGGAGATGGCAGTAGGATCATTTTTTGATGATT  
TTCGAGAAGCGTACTATTGGCTTCGTCACAATACTCCAGAGGATGCGAAGGTCATGTCATGGTGGGAT  
TATGGCTACCAGATTACAGCTATGGCGAATCGGACGATTTTAGTGGATAATAACACGTGGAATAATAC  
CCATATATCTCGAGTAGGGCAGGCCATGGCATCCACAGAAGAAAAAGCCTATGAGATCATGAAGGAG  
CTTGATGTCAGCTATGTGCTGGTCAATTTTGGNAGCCTCACTGGGATTCTTCAAATGACATCAACAAAT  
TTCTGTGGATGGGCCGGATTGGAAGGAGCACAGATACAGGAAACACATACAGGACACGATATTATAC  
50 TCCACTGGNGATTTCGNGTGGACCCGAGGCTCCCANCTGCTCACTGCTTTAGACAAAAGGGTACTAC  
GATTGACAGGNTACCAAAACCACGGCCCTAGCTTTACCGGCCGGATGCGAGATGGAATAAACTCGACT  
GAGTCTAAAAACAACACACCACATGCTGGCGAATTCAAGGAGACCGNAATCAG

>'000203a-046.scf' came from CONTIG 32 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
046.scf"(37>597)





GGGGCCCTCTAAACTATGGATCCCCGGGCTGCAGNAATTCGGCACGAGGCGGACCTGCTGGAGCTCCT  
GGCACTCCTGGACCTCAGGTATTGCTGGACAGCGTGGTGTGGTTCGGCCTGCCTGGTCAGAGAGGAGAA  
AGAGGCTTCCCTGGTCTTCCTGGCCCCCTCTGGTGAACCCGGCAAANCAGGTCCTTCTGGAGCAAGTGG  
TGAACGTGGCCCCCTGGTCCCATGGGCCCCCTGGATTGGCTGGACCCCTGGCGAGTCTGGACGTG  
5 AGGGAGCTCCTGGTGCTGAANGATCCCCTGGACGAGATGGTTCTCTGGCGCCAAGGNTGACGNNGTG  
AGACCGNCCCTGCTGACTCCTGTGCTCCTGCGCTCCCGGGCCCCGNCCCTGTGCACTGCCGCAGACG  
NNGACGGGTGAGACGGCTGCTGTCTGCTGTCCCATGCCCCGTTGTGCCGGGGCCCGTGNACCCAGCCCC  
CGGGACAGGTGAAAGCGACAGGGACGAGCATAAGTCACGNGCTCTTGTCTCAGTCCCCGCCTCCGCTT  
CTGGAGCAGTCTTCGACTTGTCTGTGGCCGCGCCCCGTTTTGTTCTCGCA

>'000203a-047.scf' came from CONTIG 36 at offset 42;"E:\SEQUENCE\export\EST\_db\000203a\000203a-047.scf"(41>502)

CACGAGGACGGACCTGCTGGAGCTCCTGGCACTCCTGGACCTCAAGGTATTGCTGGACAGCGTGGTGT  
GGTTCGGCCTGCCTGGTCAGAGAGGAGAGAAAGAGGCTTCCCTGGTCTTCCTGGCCCCCTCTGGTGAACCCG  
15 GCAAACAAGGTCCTTCTGGAGCAAGTGGTGAACGTGGCCCCCTGGTCCCATGGNNCCCCCTGNATTG  
TCTGGACCCCTGGCGAGTCTGGACGTGAGGGAGCTNCTGGTGCTGAAGGATCCCCTGGACGANATTG  
TTCTCCTGGCGCAAAGGTGACCGTGGTGAGAACCGGCCCTGCTGACCCTCTGTGCTCCTGCGCTCCCGT  
GCCCCGNCCNTGTGCACTGCCGCAGACGTGATCGTGGTGAAACAGGCTGCTGTCTGCTGTCCATGNC  
CNGTGTGCCNNGNCCCCCTGNACCCAGACCCGGTGACAGGGAAAAGCAACAACG

>'000203a-042.scf' came from CONTIG 37 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-042.scf"(1>652)

CGGCGTCCCTCTANACTATGGATCCCCGGGCTGCAGTGGTTCTGCAGCTCTGTGGCAAGCCGCGGAGT  
CTGGGTCTGATCCGCAGGATGGGGTTTTGTTAAAGTTGTCAAGAACAAGGCCTACTTCAAGAGATACC  
25 AAGTGAAATTCAGAAGAAGGCGAGAGGGCAAAACTGACTACTATGCTCGGAAACGATTGGTAATCCA  
AGATAAAAATAAGTACAACACACCTAAATACAGAATGATTGTTCTGTGTAACGAACAGAGATATCATTT  
GTCAGATTGCTTATGCCCCGTATAGAAGGAGATATGATAGTTGTGCAGCTTATGCTACGAATCCCCA  
AATATGNGTGAAGGNTGGCCTGACAATTATGCTGCGCATATTGTACTGGCCTGCTGCTGCCCGCAG  
CTTCTTTATAGTTGGATGGACAAAATTATGAAGCNAGACGAGGNGATGGAGAGATACATGNGNAAG  
30 CATCGAGCCAACTGGGCCTCACTGTACTGNAGCAGACTGCAAACCTCTACGAGTTAAGTTTGGCCCTAG  
GACGCGAGAGCTGCTTTCTACAGACACGTCTGTTGATCAAAGCAAATCAGCGAGCCCGAAGCATAGG  
CAAAGTGAATACGCCCTGTGGAAAAAATCCAAAACTTTTCA

>'000203a-044.scf' came from CONTIG 38 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-044.scf"(1>627)

CGGCGCCCCTCTACAACTATGGATCCCCGGGCTGCAGNAATTCGGCACGAGGCGAGGACAATCAAGTGT  
GGCAGCTGGGCTCATCGTCCCCAACTTCACTCTGGAGGGACATGAGAAAGGTGTGAATTGCATTGAT  
TACTACAGGGATGGTGACAAGCCATACCTCATCTCTAGAGCAGATGACCGTCTTGTGAAAATATGGAC  
TATCAGAATAAACTTGTGTACAGACACTGGAGAGGACATGCCCAAATGTGTCTTGTGCCCAGTTCAT  
40 CCTGAGCTGCCCATTTTATCACAANTTCAAAAAATGAACTGGCGTTTTTGGCATTCAAGCACCTTCGCC  
TTGAGAGGACTTGATTATGAATGGAGAAGAGATGGGGGGGGCCGCCGCGAGGTCCATAACGTGTTTTG  
GCTTTGAGAAAGAAGCATATGTTAACTTGTGCGGAGAACTGCTTGTCTGGTGCCAAGGAAAATAATGGG  
CCAACATCAAAATCACCAGCCACTAAACAAGGAGAGTGTAATTAAAGAAAAGATGCCTGCATAAAAA  
TGCAGTTGAATTACTCAATATCACAATCTAAGCGCGGTGGGGGGGGGGGGGAAATTTTTCCGCAGCCC  
45 GAAACAATGTGGGCCC

>'000203a-045.scf' came from CONTIG 39 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-045.scf"(44>624)

GCACGAGGCTTGCTGCTGCCTGCCTGCCACTGAGGGTTCCAGCACCATGAGGGCCTGGATCT  
50 TCTTTCTCCTTTGCTGGCCGGGAGGGCCTTGGCAGCCCCCTCAACAGCAAGCCTTGCTGATGAGACAG  
AAGTGGTGGAAGAAACCGTGGCCGAGGTGGCCGAGGTACCCGTGGGAGCCAACCCCGTCCAGGGGA  
AATAAGAAGAATCGATGATGGTGCCGAGGAAACCGAGGGGAGAGTGGGGANCGAGAACCCCCGCCA  
AACCACCACTGCAACACGGCAGGNGTGTGAACTGAACGAGAACACACCCCATGGTGTGGCCAGACC  
CCACCACTGCCCTGCCNTCGCGAAGTTGAGAGTGTGCACAACGACAACAGACTTCGATCCCTGCCAT  
55 TTTTGCACNAGGNACATGNAGGCACCAAAAGGCCCACTCACTGNCTACTCGGCCTGAATACATCCCC



TGCTGCATCGACTGATGATCCTGGCTGCGACGCTAAACGCCGNCACTGACAAGGAAGCACACTCGACG  
AAAATATGGATGAAAAACCAATAAAGCCGGGGGGGCCTC

>'000203a-048.scf' came from CONTIG 40 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-048.scf"(38>559)

TTATACTCCAAGGCCTGGCAAAATCACATAATCAAGATTGAATTGTTTCAGAAATATTGGCAGGATTCTTGGACTGTGTCTACTACAGAATGAACTGTGTCTATCACATTGAATAGACATGTGATTAAAGTGTTGCTTGGTAGGAAAGTCAATTGGCACGATTTTGTCTTTTTTTGACCCTGTGATGTACGAGAAGTTGCGGGCACTTATTCTTGCTTCTCANAGTTCAGATGCTGATGCTGTTTTCTCAGCAATGGATTGCGCATTTGCAATTGACCTGTGTTAAGAGAAGAGGGGAGACAGNTGAACTATTTNCTATGTGTAATATAACCAGTCACTCTCAAA

>'000203a-049.scf' came from CONTIG 41 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-049.scf"(1>306)

GGGCGCCCTTAAATAGGATCCCCGGCCTCAGGGTGGCAAGAGGCCGTGCTATTTTTTTTTTTGTAGAAGTTTGTCGCTGATGGCATCTTCAAAGCTGAACTGAACGAGTTTCTCACTCGGGAGCTGGCTGAAGATGGTACTCTGGAGTTGAGGTCCGAGTTACACCAACCAGGACAGAAATCATTATCTTGGNCCACCAGACACAGAATGTACTTGGTGAGAAGGGCCGGCGGATCCGGGAATTGACTGCTGTGGTTCAGAAGAGATTTGGCTTCCCTGAAGCAGTGTAAGCTTATGCTGAAAA

>'000203a-050.scf' came from CONTIG 42 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-050.scf"(39>525)

NAATTTCGGCAGCAGGGCTAGTCTCGAGTTTTTTTTTTTTTTTTTTTTCTTTGGAAAACCAAACATGCTTTATTTCATTTTTTTCACAATTTATTTAAACATCTCACATATACAAAATAGGTACAATTTAATTTTTCTGCTGTCCGAGAAACAAGACTTCTTTGGAACCATGGNAGAGGATGAAAATGAGACTGGCAAAGAACAATGCTGAANTAAAGAAGAGACAANTGTGGGCAAATGATCCACTTACTTTGTGGAATAAGATGTAAAGTACTGATGTTAAAGTCAAAGTAAAAAATACACAATACAGCTCAACAGCAGAGGAGTATCTCTTCTCAAAT

>'000203a-051.scf' came from CONTIG 43 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-051.scf"(38>406)

NAATTTCGGCAGCAGGATCATATAGTAAACCCAAGCCCTTGACCTCTTACAGGAGCTTTGTCTGCCCTCTTAATAACATCCGGCCTAACCATGTGATTTCACTTTAACTCAATGACCCTGCTAATAATTGGCCTAACAA

>'000203a-053.scf' came from CONTIG 44 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-053.scf"(37>515)

TGAGAGCAGCAGCCAAAAACCACGCTCGAGTGACAGTAGTATGTGAGCCGGAGGACTATGCAGCTGTAGCCTCAGAGATGCAGGATTCTGACAGCAAAGACACGTCCTTGGAGACAAGACGCCAGTTAGCCTTGAAGGCTTTTACTCATACAGCACAGTATGATGAAGCAATTCAGATTACTTCAGGAAAGAGTACAGTAAAGGAGTATCTCAGATGCCCCCTGAGTATGGAATGAANCCTCATCAGACTCCTGCCAGCTGTATACGCTGAAGCCCCAAGCTCCNTTATCAGTCTGAATGGAGCCNTGATTTATAANCTGGGTGATGCTTTGAA

>'000203a-054.scf' came from CONTIG 45 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-054.scf"(40>404)







AAGCTTTTTCACAGGCCAACCCGGGCACGGGCCTGCAGGCTGACCCCTCGGAGGCCTCTGGCTGCATCAC  
TATCAGATCAAAACCAGCGAGGAGCTGCCGGGAACAGCCAGCCGAGTCCAGACATGGACACAGTAGC  
TGGATGGACACGAGACGGACAGGTCCTGTCCAGCTGTGGACAGGATTCAGATGCAAGCTAGGCACTG  
GGGGCAGGGCTGGGGAGCAGAATGAAGCATGCAGGAGGGGCCCCGGGGCCTGGCTCANCCACCGG  
5 CCGCCGAGCCTCACCGTGTGGGNTCGCTGGGGNCTGGGCTCCCCGCCACACTGGACTTGAGGCTCTGN  
AGCGAGAGTTCCAGCCATTGTGATGTTGCTCTCACAACAAATNCTTGCCACTGGGAGAATTGAGATGG  
TGACAAACTACGCCCAAGCATGTGGATGCCAGC

>'000203a-069.scf' came from CONTIG 59 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
069.scf"(12>643)

10 CTCTATACTAGGGATCCCCGGGCTGCAGTAATTCGGCACGAGGCTCGGTTTTTTTTTTTTTTTTTGTCTC  
TAATTAATAATTTTATTGAAATCTCTCAAACGTTACCAAGAAATAGTTTTTGCAAAAGGGAGGGAAGG  
GAAAAAACAAACAACAACAACAAAAAACAGCTAACAAAGCAAATTCACATGGGAGCTCCCTCTGCTG  
GTCTGCAGTAGGTTGATATGTTACAAACACATTCCCAGAGACAAATCTATTTGCTGGAGAAGGGACAA  
15 AAAACAGGTGTGTGGGCTTTGCCTCNAGAGAGAACTGGCATGCAGNGAGCGGGGTAGTGAAAGCA  
GAGGAGCAGCGCAGCGCTAAGTCGCTGGTACAGAAGTACGGGCCCACTCAGGCTATGNGTAAAGGC  
AGCCTGTGACTCTATGTCTCTGCATGACTGAGACAGGTGGCAAGNAACTGGGTTGGAGCCTACTATTG  
TCTTGCTCTCGGGTTGCTACAACCTATGTAGGTTGCGATTAGACGACGAGCCTCAAGATTTGCGCTTTG  
TTGACATGCAATGCAACTAGCTGTATTACTTTAAAACTTTACCTATGTGAAAAATAATCCGTGATCAAG  
20 GAAGGCAAAAAAATCTTT

>'000203a-070.scf' came from CONTIG 60 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
070.scf"(19>728)

25 CTACGGCATCCCCGGGCTGCAGGTCGAGTTTTTTTTTTTTTTTTTTAGTTAATTACTTTATTACATTT  
TAGTGCTTTCTTAAATAAAATATAATAATTATCAAACATACAGTGAGAAGTAAAGCACACGTC  
TGAACGGCATGTACAGGAGTTCCTCAGGACTGTTTCAACACTCAGCACTGGAGAAACCGCACAGGC  
CTACCTATGTACAGACGACCCAACCGCCAGGGCGAGGCCACCGCTCCCTCCCTCCTCATGGACACG  
GCCACTCCCCCTTGCCTGAAATGACCAGTTTGCATGTTTTAACTTTTCTCTCCGTTGAGCTTCAGTTTT  
30 TTTTTTTCTTTTGCAGTTTTGAAAAAATTCAAGTAACACTCCCAAGAAAAAAGTGCAAACTAATA  
AGGGACTCAGAGTCCGGCGCCGGTACAGGGGCAGCGCACAGCGGGGGGACGCGAGGCCGCGGAGTCTGTCC  
CGGAACACGGGGCGCAGGACCCCCGCCACTCGAGGAGGGGGGACGAGGCGCGGCTGGGTCCAAA  
GCGCCAGACCTTTGTTGAAAGCAGCACAGCCCGCGAACGAACGCAGTCCGCGGCCGACTTCGGACCA  
AGGAAGGAGAGGGGGAAAAAATAAAAGTATTAGGATCCTTTTATAAAATATAAAATTTTCAAATTTTAT  
35 AAAGGGCGCCCCCGGGGGGGGGGCCCC

>'000203a-071.scf' came from CONTIG 61 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
071.scf"(38>713)

40 TTGACATCCTCCATTTTCGCTGTGCTGAGTTAGTACAGGGAAGACGGGGAAGTGAAATGCCAACAGTAG  
TAGATGGGGGACTTCCCTGGTAGTCCAGTTGTTGAGACTTCGCCTTCCAGTGCTGGGGGGTGCAGGTT  
AGTCCCTGATGTGGGAGCTAAGATCCCTCATACCTCATGGCCAAAAAACAGAAATGTAAACAACAGAT  
ACAATATTGTAACATATTCAATAAAGAATTAATAAAAAAATTTTTTTATAAAATATACTTAAAAA  
CCTGACAGTTTCACAGAGAGGGCTGTGATAGGATTGCTCATGAGGAAATCCAAGGAATAGAAGTTTTT  
GATAGAGGATGATGGGAAGTGTGTTAGCAGAAGTAGGACTGCCTACTGTCCATCTGGACCATGNAAA  
GCACANATTATCCCGCACAGCTTGGAGAGAATGTCTCACTAAGAGCTCATGCCTTGATTCTCTCCAC  
45 ATTATTTGTATTGTTGGTTTTATATACGTTTTTTTGTGATATTACCATATTAGGTTTGTGTGATGATTGT  
AGGACATTCTATGTAGAGAAAGATAAACTTAAAAAGAAGCCCTTTTTCTTTTTTTNTTAAATAATGC  
ATCTTAAGTGAGTCAACCTTTTCGGCAAAAAAGAGAACACTTTACTTATTACTATTTCTT

>'000203a-072.scf' came from CONTIG 62 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
072.scf"(38>334)

50 CTGGTGCTTTCGGCCTCGCTGCGGTGCCGACAGTCCGTTTCATGCCTCGCGTTTGAGGGCAGGGGGTGG  
CTCAGCGGCTGGCTCGCAGCTTTCTCCGCTGGCTGAGGCCCGCCACAGCCGACATGGGCTGTTTCTGCG  
CGGTTCCGGAAGAATTCTATTGCGAAGATTTGCTTCTGAATGAATCCAAGTTAACTCTCACCACCCANC  
AAACAGGCATCAGAAAATCACGAAAGGGCTCATTGTCCTTGAGCACCGTATCCGCCACTCAACCCTGG  
55 GGAGGTGAGTATTTTGGCTTGC



>'000203a-080.scf' came from CONTIG 69 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-080.scf"(38>623)

NAATTTCGGCACGAGGCAAGCGCCTGCTGGAGCCCCGCTGCTCCTTGCACTTGAAGTCTATGGGGTTTG  
GTGGGCAGAGGCTCAGGAGTCCCCTGGATTTCCCCAGCTGGTATCCTGGGACGTGGTAAGCCTTGGGG  
5 CTGGGGTAGCATGGGATCCCCGAGGACCCANATTCTGGTACTNAGGGCAAGGNGAGGNGAACCCGN  
ACCTCANCCGTCCCCAGTCTACAGCCTGAGCCAGTGTGCTCCCAGCTCCCCANTCCNCATGAAGCCT  
GCCGNGGGCTGGCAGNAGGGNTTAGAGGNNCTGGCCTTCGATTCCTTTTCTGTGCGCTGCTTTACCC  
GCTTCTGCAGCTTTGCTCTGGCCTGATGATCGTGCTTTGTTCTGTACTGTAACTGAGCATGCCACA  
TTTGTGAAATGTTGTTCAAGTGTAAGCAAGGAGAGGTCCAATTGTGATGGGGATGGAGGCATGGACT  
10 CTGCTTCTATCCTTCTACTTATCTGAAATGTTGCTTCTGCTGTTGGATTATTATACAGGGCAACCTATAC  
AGCGAAAAAAAAGGCAAAAAATTCTCTACCACGAGA

>'000203a-081.scf' came from CONTIG 70 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-081.scf"(41>563)

CTCCAGTTACCTCTGCCAGTACCGCTGTGTCAACGAGCCGGGCCGCTTCTCCTGCCACTGTCCACAGGG  
CTATCAGCTGCTGGCCACGCGCCTGTGCCAAGACATTGACGAGTGTGAGTCGGGTGCGCACCAAGTGTGCT  
CTGAGGCCCAGACTTGTGTCAACTTCCACGNGGGCTACCGCTGTGTGGACACCAACCGCTGTGTGGAG  
CCTTACGTCCNAGTGTCCGACAATCGCTGTCTGTCCGGCCTCAACCCCTGTGCCGGGAGCAGCCCT  
CATCATCGTGCACCGTATATGAGCATCACCTCGAGCGGAGCGTACCGCGGACGTNGTTNCAATCAANC  
20 ANCNNTCGTCTACCTGTGCTACATGCTTTCAATCGTGCTGTAACTCGCAGGAACTCTACATAGCAATCA  
CATGCACGCTGCTGTCTCGCTCGGCTGGACGGCCCCGGATACGGCTGACTGAGAGTCACTTACTCTCTG  
ATACGGCACTCTTTTGAATACGCTTGGGGCTACTTTGGGGGGG

>'000203a-082.scf' came from CONTIG 71 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-082.scf"(48>533)

GCACGAGGGCCTGCTGCAGCCCCGCTGCCAGCTGGAGTCCCTGTGGGTGAAGTCCTGCGGGTTTACGG  
CCGCCTGTGCCAGCACTTACAGTCTATGCTGACCCAGAACAAGCATCTCTTGGAGCTGCAGCTGAGC  
AGCAACCCGCTGGGCGACGCGGGCGTCCACGTGCTGTGCCAGGCCCTGGGGCCAGCCGGCACTGTGCT  
GCGGGTGCTCTGGGTGGGCGACTGTGAGCTGACGAACAGCAGCTGTGGCGGCCTGGCCCTCACTCTGC  
30 TGGCCCAGCCCCACCTGCGGNAGCTGGACCTGANNCATACGNNCTGGGCGACCCCCGCGTCTGCAGCT  
GCTGGGGCAGCTGGAGCACCCGCTGCAGCTGGAGCACTGTCTGTGACTCTATGGACCGAGCATGGA  
CGACGCTGCGGCTGTGGAGAAAGCAGCTGGNCTGCGATCTTTCTGACCCGTCCCCAGNGCGTNATGAA  
AAGTNCATCA

>'000203a-084.scf' came from CONTIG 72 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-084.scf"(47>388)

GCACGAGGCACAGTAGCATCACTTCAGAAAGGAGCCAGACTTATTCTCAAAGAACTATGTTACACTT  
TTCAGCAGAAATAGCGATGGTTGTAACATATGTATCCCCTCCCTCGGATTTGAAGGCACAATCTACAG  
TGTTTCTTCGCTTCTTTTCTGATCTGGGGCATGAAAAACCAAGATTGAGATTTGAACTATGAGTCTCCT  
40 GCATGGCAACATAATGTGTGTCACCGTCAGGCCAAACAGCCAGCCCTGAACGGTGGNTTTATTACTTG  
TGTATTTGTGTTGGATGATAAACACTCATCTCTCCTGTAGTCCCTGCTCATTTCACTTAACCCTAN

>'000203a-085.scf' came from CONTIG 73 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-085.scf"(9>658)

CGTCTATACTAGGGATCCCCGGGCTGCAGAATTGGCACGAGGGGAGCTCCGCATCCACACCGGCCAG  
CCCAGATCCCGAGGTCTGACAGCGCCCGGCCAGATCCACAAGCCTGCCAGGAGCCAGCCGAGAGCC  
AGCCGGCCGCGCGCTCCTACCCAGCAGTCTCTGTCTTCGGCCTGAGCCCCGCGTCCTTCCCGGGACC  
TCTGCCCCCTCGGCGAGTGTGCCACCCCTGCCGGCCATGGAGACCCCGTCCCAGCGGCGCGCCACCCGC  
AGCGGNGCGCAGGCCAGCTCCACCCGCTGCCACCCAGCATCACCAGGCTGCAGGAGAAGAAGA  
50 CCTACAGGAGCTCAATGACCGNCTGGCTGTCTACATCGACCGTGTGCGGGCGCTGGAAACGAAATGCA  
GTCTGCGCCTCGCACACTGATCTGAGAGGGGGCAGCCGGAGGGTCTGGCTTAAGCCCGCTCCAGCCGA  
CTGGGGAGCCGCCAGACCTGACCGTGGNCAGACGCGCCGCGCGGACGACAAGGGAAGAGTCAGG  
ACCAGCACGCATCAAAGAGGAACGAGGCCAGCCGCTAGACGAGGCGTCACCAGAGCGGCGGCTGTT  
AGAAGCCGGGGGACGGACGGGGAGGCATGGGCCCGGGGCAAC



>'000203a-086.scf' came from CONTIG 74 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-086.scf"(48>633)

GCACGAGGATGAATTTTCACTGGCCCTTCGGCATCTGGTTGTGCAAAGCCAATTCCTTCATTGCCCAGT  
TGAACATGTTTGCCAGTGTCTTCTCCTGATGGTGATAAGCCTGGACCGCTATATCTACTTGATCCACC  
5 CGGTCTTATCTCATCGGTACCGTACCCTCAGGAACCTCTGATTGTTATTATAGTTGTTTGGCTTTTGGC  
TTCACATAATGGGTGGGCCAGCTCTGTACTTCCGGGACACTCTGGAGTTGAATAACCACTCTTTGCTA  
TAACAACCTCCATGAGCATGATGTGGACCTCAGGTTGNTGAGGCATCATGTTCTGACCTGGGAGAAAG  
TTATTGTTGGGTACCCTCTCCCTCTGCTAACAAGAGCATTGCTACTTGGCCTCATCTCAAGAGAAGAA  
CGAGCACCTGTACTCAGAAGCCTCCTGACCAACCGCGNGGNCATGCCTTNCGATTGCTGAATCCTAT  
10 CACTGTTACATTGGAACCACGACCACACATACTATTACCAAGCTACAGCACACCCCTTCACGCCGNG  
TTCTCAAATGCTGACCCCCCTTACCCGATATAAAAG

>'000203a-087.scf' came from CONTIG 75 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-087.scf"(46>645)

GCACGAGGATTTAATATTGTGGAGGGTGGGGCTTCCAGGTGAATACAGTTGCTGGTTGCTGAGCCATG  
CCCAACTCTTTGCAACCCCATGGACTGCAGACCGCCAGGCTCCTCTGTCCATGGAATTGTCCAGGCAA  
GAATACTAGAGTGTGTTGCCACTCTCTTCTCCAGGGTATCTTCCGAATATAGGGATCAAACCTGGATCC  
CCTGGATTGCAGGCAGATTCTTTATCCTCTGAGCCACCAGGGAAGCTCCTAGTCACCCTAAAACCTCCA  
AATTCTTAAAAAATTACCCTATCTACTTCCACCCAGTCTTTCTCTTCTTCTTTTGGTGTCTTGATTT  
20 TTGCTTTTGGCTCTGCCACTGCATCACATCACCTCTTCCAGCCTGACTATGAGTCGCCTCAGACTCAGA  
GCAGTTCACTCACGAATCTTGGCTTGACCACATACTCTCGNACTTGGCTCTGACTGCTTTTTTTTATTGTT  
ATTGACATCTCCACCCGCGAGATCTCTTGGACAGCCTTGTATAACATCTGTTATACCTTTTGTACGCT  
ATTTGGGAAAAATAATTAAAGGGGCTCCCCCAAAAAATTACGCAA

>'000203a-088.scf' came from CONTIG 76 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-088.scf"(19>21)  
TAT

>'000203a-089.scf' came from CONTIG 77 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-089.scf"(1>428)

AGGTGGCGGCGCTCTTATTATGGATCCCCCGGGCTGCAGAATTCGCACGAGGGAGGCCTTTTCGGCCGC  
AGCCATGGCGCCCAGCCGGAATGGCATGATCCTGAAGCCCCACTTCCACAAGGACTGGCAGCGGCGC  
GTGGCCACGTGGTTCAACCAGCCGGCTCGCAAGATCCGTAGACGCAAGGCCCGGCAGGCCAAGGCGC  
GCCGCAATTGCCCCACGCCCCGCGTCCGGTCTCTCCGGCCGGTGGTGAGATGCCCCACGGGTACGTAC  
35 CACACGAAGGTTTCGTGCCGGCAGGGGCTTACGCTGGAGGAGCTAAGGGTGGCCGGCATCCACAAGA  
AGGTGCCCCGACCATTTGNNGATCTCGTGGACCCGNAGCGCGGANCAAGTGCACGGAGTCCCTGCAGG  
CCACGTGCAGCGCTCAAGGAGTAN

>'000203a-090.scf' came from CONTIG 78 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-090.scf"(42>591)

NAATTTCGGCACGAGGGGAAGTGTATAATTTCCCTGGCCACTGCAGGTGCCAAGTACGGCGTGGGCTTCT  
GGAGGCCTGGCTCTGGAATCATTCACCAGATCATTCTGAAAACTATGCGTACCCTGGGGTTCTTCTGA  
TTGGCACTGATTCCCACACCCCTAATGGCGGTGGCCTGAGAGGCATCTGCATTGTAGTCGGAGGTGCT  
GATGCCGGGNACGTTCATGACTGGGATCCCCTGGGAGTTGAAAGGGCCCCAGGTGATTGGGCGTGAAG  
45 CTGACAGGCTCCCTCTCTGGCTGGACCTACCTAAGATGTGATCCTGAAGGTGCGGGTATCCTCACAGT  
GAAAGGTGGCACGGGCGCCATCGGGNAGTACCACGGGCTGGAGTAACTCCATCTCTGCCCCGCATGC  
GACCTCTGCACATGGTGCAGAATCGGCCACACTTGTGTTCCCTACACACAGAGAANAATACTGACAGA  
CGGCGGCAATATGCACCTGTGAGATTAAGATACTGTACTGCTTGCTGCCTTTACAATTATATTACCTAG  
GCGA

>'000203a-091.scf' came from CONTIG 79 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-091.scf"(41>338)

TAATTTCGGCACGAGGGCCCTTTTCATCACCAACCCTGGGTATGACACTGGAAACGGTATTCATCTTCCCG  
GCACTTCTGGGCAGCAGCCCAGTCTTGGGCAACAAATGATCTTTGAGGAACATGGTTTTAGGCGAACC  
55 ACACCGCCCAACACGGCCACCCNCGTAAGGCATAAGCCAAGACCGTATCCGCCGAATGTAAATGAGG

AGATCCAAATTGTTTCATGTCCCCAGAGGAGACGTAGACCATCATCTCTACCCTCACGTTGTGGGACTC  
AATCCAAATGCTTCTACAGGCCAAGA

>'000203a-092.scf' came from CONTIG 80 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
092.scf"(47>391)

GCACGAGGCAGCCCCGAGGACAGCCAGCAGGACCTGCCTGGGGAGCGCCACGCCCTCCTGGAGGAAGA  
GAACCGGGTGTGGCACCTGGTGCGGCCACGGACGAGGTGGACGAAGGCAAGTCCAAGTGCGGCAGC  
GTGAAGGAGAAGGAGCGTACCAAGGCCATCACCGAGATCTACCTGACCCGCTGCTGTCCGTCAAGG  
GCACGCTGCAGCAGTTCGTGGACAACCTTTTANNAGCGTGCTGCGCCCGGGAAACGCGTGCCACCG  
GGCGTCAAGTACTTCTTCGATTTTCTGNACGAGCAGCAGAAAAGCATGACATTANAGATGNANGACA  
CCNATTNC

>'000203a-093.scf' came from CONTIG 81 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
093.scf"(44>356)

CAAAAACCAGAAAGTGACGGGAGGTGCTGCGCTCCCCCTGCGTCGTGGCAAAGTCAGCTGGCCTCTTGTG  
TGTGCGTGTGTGCGTGTGAGGAGCCGAGTGTGGGTGTGTGGCGGGCGTGGGAGCAGCTTTCTCACATA  
GTGCCTTATACACGCTCTAAAGAAACAGTCTTACATGTTAAGAACAACAGTGTACATTTTCTACAC  
TACCTTNCATTTTACGTAGCTTTGATGACCAGTTTTGCAGTTCATGGAGGAAATCATGGNNGCGTCCCAA  
GGGGCTCCCCATGCCCGAGAGCCGACTGGTCNTGTGACG

>'000203a-094.scf' came from CONTIG 82 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
094.scf"(40>373)

GGGTTTTTTTTTTTTTTTTTTTTTTGTAATAAAATAAAAAGTTTATTAACAAGGAATGCACTTTTCCAGCCAC  
AAGTGTCTTCAAAAATTAACAAAACAAAAAATATATATATGGCCATAGTTCACAGTTAAGCAGCCA  
AAAGCTGCTCCAATTATAGCCTTTAAACAACATGTGAGCATCCTCCCTTTCCCTCCCCTTCAGTAAGTA  
TATTCACAGCTTCAAGTCTCTGTCCGAAGCACTCTCCACAGAGAGAAGTTAAGAGTCAATGCACCTTT  
CTGCAAAATTGTCTGAAAAGCTTTANNAACAGTACGTCAAGGAACTGCTTCGGNTC

>'000203a-095.scf' came from CONTIG 83 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
095.scf"(42>489)

CGACAGCCTAGAGGGCTTCGTGCTGTGTCACTCCATCGCTGGGGGAACAGGCTCTGGCCTGGGCTCCT  
ACCTCTTAGAACGGCTCAACGACAGGTACCCCAAGAAGCTGGTGCAGACATACTCAGTGTTCCTCAAC  
CAGGATGAGATGAGCGATGTGGTGGTCCAGCCCTACAACCTACTGCTCACGCTCTAGAGGCTGACCCA  
NAACGCCGACTGTGTGGTGGTGTGCTGGACAACACTGCCCTGAACCGGATCGCCACAGACCGCCTGCACA  
TCCAGAATCCCTCATTCTCCCANATCAACCAGCTGGTGTCCACCATCATGTCAGCCAGCACCACACCCT  
GCGCTACCCCGCTACATGAAACACGACCTCATCGGCCTCATCGCCTCGCTTATTCCACGCCACGCTNC  
ACTTNTCTGACTGTTTCACCCCCTCCACAGNACAGCG

>'000203a-096.scf' came from CONTIG 84 at offset 0;"E:\SEQUENCE\export\EST\_db\000203a\000203a-  
096.scf"(43>460)

CATCAGGCTCGAGGGCTCTGTTGTGCGGACTGCTCCCCCTGGACCCTCTGGTTTCTCTGGGCCCTCTGA  
CCTCTTTGATCCTGCTGGTAAAGAAGGGCTTCGTGGGCCTCGTGGGGACCAAGGTCCAGTTGGTCGAA  
GTGGAGAGACAGGTGCCTCTGGCCCTCCTGGCTTTGTTGGTGAGAAGGGTCCCTCTGGAGAGCCTGGT  
ACTGCTGGGCCCTCTGGGACCCAGCCACAAGGCCTTTTTGTNGCTCCTGTTTTCTGGGTCTCCAG  
CTCTACAGTGAGCGCGACTACACGTGTCGTGATCTGTGGAGGGGTTGACACCTCTTTTCTCGTTACAT  
ATAAAAATGTAAACCTGCCTTAACTGGACATATGACCTGATACTCACTTATATTTTTCTGGCTTTCTTA  
ACAAA

>'990729A-001.scf' came from CONTIG 1 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
001.scf"(56>557)

GCACGAGGGGTGGTTTTGCTGTGTAGCAGCAATGTCAATACAAGGTTCTGCAAATTTACAAACCCAA  
TGGAATATTGTTGGGGGAATTCAACAATTTGCCACAAGAAGAACTTATTGAATGGATTAAATATAATA  
CTAAACCGGATGCAGGGTTTTCGGGTGCCATGCCACAATGGCAAGTGTAAACCTCTCCGCACTCGG  
GCCGTTGTGAATCATCCACATTATGAAGATGCGGGTTTAAAGAGCCAGAACAAAATAGTATTTTCGATGA  
TAAACGGAAGCAGTGAGAAAGGAGGAGACTGTAAAGTACAGTGAATTTTCAATTTGGAGAATGGGGGT  
AAAAAATACAAGCGGATGCAGAGCGGAATTGGGATGGGAAACCTGTATGCGGAAATCCCTTTCAACC

TTTAAGAGGCAAACCCCTCCCCGATTCCAACAAGGACAAAATAAGAGGACGCGCTCAAAAA  
CCCAAAGGGTCTTTGTTAACTGCTGTT

5 >'990729A-008.scf' came from CONTIG 2 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
008.scf"(315>902)  
GAGGTTGGGGTGTGGTGTGGGTGGGTAGGTGGTGTGTTATGTGTGTTGTGGTGTGGTGTGTTGTTGTTG  
GTGGGTGTGGTGTGGTGTGAGCTTGTGGTGTGTGCGGTGTGTGGTGTCTGGTCTGTGTTGTGCGT  
CTGTTGTTTCTTTGTTTTGTTTTCTTTGTTGCTGTTGTGGTGTGCTGTATTCTCTTTCTCTCATGTTT  
GTTTCGTTTCGTTTTCTTATTCTTTATGTCTTATCTTTGTAATCTTTTTTATTTTTTTCATTTTTATATTCT  
10 ATTCCTTATATATATATGTTACTCTTCTTTCTTTCTTTTTTTTTTTTTCTTTGTTTTTTGTTTCTTTATAT  
CTATATCTTACGTTCTTCTATTTATATATTCTTACGTAATACTATCTTTCTTTCTCTTATATAATTT  
TTTTCTATTCACTTTTTGTTTATCTCTTCACTTTCTTTTTCTTTTTTTTTATTTTATTTTATTTTCTATT  
TTCTTCTTCTCTATTCTTGTGTGCTATCTGCTCTATCTTTCTGCATTTTCTCTCTTTTTTTTATACTAT  
AATAATTTATTTAAT

15 >'990729A-028.scf' came from CONTIG 2 at offset 149;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
028.scf"(291>388)  
GGTTGTTTTGTTTTGTTTTTTTTTTGTTCTTTTTTTTTTTTTTTTTTATTATTTATTGTATTTTTTCTTT  
TTTTTTTTTTTTATTTTTTTATTT

20 >'990729A-012.scf' came from CONTIG 2 at offset 234;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
012.scf"(576>659)  
TTATATTTCTTTTATTCATCTTTTTTATTATTTTCACTTTTATTATATACTTTTCATTTTTTATTTTATTCTT  
TTAATCCTCTT

25 >'990729A-002.scf' came from CONTIG 2 at offset 430;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
002.scf"(249>314)  
ATTCTATTTCTTTTTTATATCTCTTCCTTCCTTTGTGTTTTGTGTCTCTTTTTTTTTCTCTTTGGT

30 >'990729A-003.scf' came from CONTIG 3 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
003.scf"(48>272)  
TTGGAATTAGGAACGAGGGGGGGGCTGATTCCGCAGGACGCCGCCGTCGGGGCCTTCGTATTGGTGGT  
GGCGAGAGGGCCGCCGCCGAGGACAGGCCGTGGCGGGTTCGAGGCACTCCCCAGGAGAGCAACATTC  
ATAGGGTGGGTGGATAGACGGGGTACCCGGCCCTGACCGATATACATGGCCGTTGTGGGACATTATT  
35 TCACTGTTGGAGGGCCCTTCCA

>'990729A-004.scf' came from CONTIG 4 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
004.scf"(62>70)  
TTTTTTTTT

40 >'990729A-005.scf' came from CONTIG 5 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
005.scf"(51>589)  
CTGCCAAGGAGGGCAAGACATACAGGTGGTAAGGTGATGCCCGCTGTACCTTCTTCACCAAGGTCCGG  
AGATGACAGATACCACTCCAAGAGCGCACACAGGAGGGCCAAAGCCCCACAAGTGGCCCGCACTGCG  
45 TCCAAGAGCCTTTGCGCAACGCGCTCCTCACCTGGGCCAGCACCTGCGCATCCACCTAGGCGTGCA  
AGCCCTACCACTGGGTCCTACTGTGATAAGAGCCTTTGACAGCTCTCCACCTCCAACAGCACACCA  
AAAANCACACAAGCGACAAACCCTCAAGGGCCACATCTGGGGTGAATGGGTTCACTCAATCTCCA  
CCCCCAACCACACGCCAGGCAAAAGGGCAAGCTCAAGGGCCCACTGCTCCGGGGCCCCGGCCCCGCC  
CCTGCGACCCCCCTCGCCATGCCTCACCGCCAGCCGCTGTGGGGAGGGGGGGGGCGCCCCGGACTACT  
50 ATGAGAATACAACACAGGGGGGGCGGGGGCACTGCCCCAGGAGAGCCCCATCGGGGATTTTTTTGGG

>'990729A-006.scf' came from CONTIG 6 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
006.scf"(57>631)  
GCACGAGGGTTTCTGGCATCCTCAGGTGTACTGGNGATCCTGTGTCTATATTGCTCCCTCACTGAAAC  
55 TTCCAATAGCTGCCCTGTAGGCTGCAAACCTCAGATGCCCGTGTGGGCAAGTGATGGAGATCAGTGAAT  
ATCTGGGTACTAAAAAAAAGCACCATAAAAACTAGACAGGGTTTTTAAAGAACTAGACAGGG







>'990729A-024.scf' came from CONTIG 21 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-024.scf"(101>231)  
CGCGGGTTGGGTGTGCTGGTGGCTTGGTTTTTTCTGCTGATTGTCTTGCTGGTTGCAGTTGTCTTTGTGCG  
TTGTGTTTGGTTTTTTGTATGTTGGTGTGTTGTGTGGCTATTATGGTGTGTGTGGGTGTA

5  
>'990729A-025.scf' came from CONTIG 22 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-025.scf"(31>550)  
GTCCCCCGGGCTGTTTGGTAGAACCTTTATTTTGTGGTGAATAATCCTATAAATTGCTTGGAGTAATTTA  
TTTTGTTTATTATTTTCTATTAAAAAATTGTCAGACCTTAAAAAAGAAAAGTAAGGTTTAAAGCATCAT  
10 GTTGGCAAGTCATTTTTATGTGTGGGGGAATTTGGCAAATAAATTTTAGGGGGATTGTTCTTTTTTCCTT  
CTTGGACTTTTTATCAGGGAGAACATGTCAGGATAAAATTTAAACTAAATTCAAATCATTTGGGGG  
CGGTGAAACAATGAATAATATAGGGTGGGGGGCTCTATTTTCTTATTTCTGTTGTATGACAGGACTGG  
ATCGCTTTGTGTTTTTAAATATTAAGATAGGGGGTTGCCACTTCTGGTGGTTGCTTTGGACTGTGGC  
CCGGGCAGCCGATTGGGGGAGGAGCAAAAAATGATACTATTTGTGTGGGCGAGGGCTGGTGGGACAG  
15 GAACATTTTGTGTGTGGGTGTTTATTTTTTTAGGGAGAG

>'990729A-026.scf' came from CONTIG 23 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-026.scf"(44>536)  
TTTGTGAGTCTCATTTTAAAGTGGCCTTGATATTTAAACTATTCTGCCCACCAATTCTTTTCCTTGGCCA  
20 CTTTTTCCTCGTGTCTCTTCTGTCATGCTGCTTTATTTGCTTCTTCCCCACCACCCTGGGGTATGAGTTAT  
TAAAAATGAAAGGGGTAAACTAGTGGGGTGTGGAGATTAAACATAAAGCACTGATTTAACTTGCTAA  
GTAAACTGAAAGATAAATCCTGACTGCCTACTATCCAATGTGAGTTAACCGCGTCCTCCCTTCATTTT  
CTCAGTCCCTAAAGCTTCTGTCGCGGATTCCTTCATTTGCTCTTGACTTCACGTTGCTCTTCTCTTCTCC  
CGCTTTGCTCCTTCTGTCNATGAGTTGATGAAATGGAAGATTAAATGCATGCACTAGGTTGGAGGG  
25 GGTGNGGTNTGTCTTTCTACTAAGGTATAGCCATCACTTCCTAGATAAAATACTACCTAAATTGATGTCT  
CATTTG

>'990729A-030.scf' came from CONTIG 23 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-030.scf"(45>376)  
TTGGTGAGTGTGCTATTTTAAAGTGGCCTTGATATTTAAACTATTCTGCCCACCAATTCTTTTCCTTGGCCA  
30 CTTTTTCCTCCTGTGTCTTGCTGTCATGCTGGTTTATTTGCTTCTTCCCCACCACCCTGTGGAATGAGTTA  
TTGAAAAAGGAAAGGGGTAAACTAGCGGGGTTGCGGAGATGAACATAAAGGACTGATGTAACCTTGCT  
AAGAAAACTGAAAGATAAAACCTGACTGCCTACTATGCAACGGCAGTTAACCGCGTCCTCCCTTCAT  
TTGCTCAGGCCCCCTAAAGCGCTGCCCCGATTCTTCTTTGCTCTTGACTTCACTTG

35  
>'990729A-027.scf' came from CONTIG 24 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-027.scf"(54>547)  
GCACGAGGATCTTGCTGCTTATATGTACCTGTGCTTATATCCGATCCTTGGCACCCAGCCTCCTGGACA  
GAAATAAAACTGGGTTGTTGGGTATATTTTGAAGTGTGCCAGAATTGGTGAACGGAAGAGTCCGTAT  
40 GTTGCAAGTGTGCTGTATCGTGATGGCCTTCAGCATCCTTTTCATACAGTAGCTTGAACAACGCCAGAA  
TTCCAGGCGCTATCAGATTTAAATATGACAAAAAAGGACGATCTGCCGAAAATAGAGGAAAGAATGG  
TTAACCTTTATCTCTCAAATTGAAGAGCTACACTCTCACTGCGTTCTCTTTTGTATTGGACCAAGTC  
TTATAAAAATTAGAGTAACATTAATACCGAGTGAAATGGNCTGAACATCACCCACACTNCGCTCATAT  
ACATTTGCTTGTGTCATCTTTGGCTGATCAGCTTAGGAGATCTTAGCCAAGAAAAACAAAGTAATATAGT  
45 CCCTTCTGGATGAAG

>'990729A-029.scf' came from CONTIG 25 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-029.scf"(55>468)  
GCACGAGGCTGGGCTGTGCAAAGCTGGGTTTGCAGGAGATGACGCCCCCGCGCCGTCTTTTCTTTTCA  
50 TTGTGGGGCGGCCTCGTGACCAAGGGGGTGATGGGGGAATGGGGCAAAAAGACAGGTATGGGGGA  
GATGAAAATCAAAAGAAGGGGGGGGATCTTACTCTCAAATACCCATTGAACACCGCATAATTACTAA  
CTGGGGTGACAGGGAGAAAACTGGCACCACTCCTTCTACAATGAGCTGCGGGGGGCCCCGAGAACA  
CCCCACCTGTCACAAAGCCCCCTGAACCCAGGCAACAAGAGAAAGACCAAAAACAGTTGAAACTC  
AACACCCGACAGGACGCGGCTCAACTGGCTTCTCTTTGCTTGGCGACAACGCAGGGCCGGATTAGGA  
55 GGGGACCACA



>'990729A-032.scf' came from CONTIG 26 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-032.scf"(58>61)  
TTGC

5 >'990729A-033.scf' came from CONTIG 27 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-033.scf"(54>518)  
GCACGAGGGTGGAGTCCCCTGCTGTGCCTCGGATGTGAAGCTCAAGCTGTACGACCGGAGTCTGGAG  
TCAAACCCGGAGCAGCTGCAGGCCATGAAGCACATCGTTATGGGCACCACCCGCCCCGCCCCCTACAT  
CATCTTTGGGCCCTCCGGGGACAGGCAAGACTGTCACCCTAGTGGAAGCCATCAAGCAGGTGGTGAAGC  
10 ACTTGCCCAAAGCCCACATCCTGGCCTGCGCTCCGTCCAACCTCAGGGGCTGACCTCCTCTGTGACGGCCT  
CCGGGTCACTTACCCACTCCATCTACGNCCTCTGGCGCCCACAGGATATCCCCTGGCCCTGAGACTCAG  
CCCTGTGTTACTGGAGCAAAGAGGGATTGTTTTTCTTCAGAAGAGCTCAGNATTCGNGCTTATTACAC  
CTCTCCTGCAGCGTGGCTCAGCACTTCTCATCCTCCACCTCTTTCGCAGCGGC

15 >'990729A-034.scf' came from CONTIG 28 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-034.scf"(46>481)  
TGGAATTCGGCAGGAGGGCGAGAGGAGGGGGCTGGGCGGTGGGGAGCCCCGCGGAATGGGGCACCCT  
GGGCTACTTCTGCTGATGCTGTTAGGCGGGTTCCTCTGGGACGCATTCACCGGCTGACGCTGACGGGG  
GAGAAGCGAGCAGATATCCAACCTGAACAGCTTTGGTTTCTACACCAACGGCTCCGTGGAGGTGAATCT  
20 GAGCGCTCCTGAGGCTAGGCCGCCAGGATACAGAAGAGAAGGCCCCGCTGTGGGGGTGAGGCTGACC  
CGGTGAGATCTGCAGCATTCGCTCCTATCAATCGGGACTCATGAGTGGCTCTACGGAACAGAGCAG  
CCCTGGTCTTACTCACAACAAGGATTGGAGCCAGTCGAAAGATGGGAGCAAAAAATATTCTCTTGCT  
GGCTCCTCGCATCACCTCAACAGGCTCCGA

25 >'990729A-035.scf' came from CONTIG 29 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-035.scf"(49>380)  
GGGGTGGGAGCAGGAGGCACGCGGGGTGTGAGGCCACGCATGAGCGGACGCTAACCCCCACCCAGC  
CGCAAAGAGTCTACATGTTTAGGGTCTAGACATGTTACAGTTTGTGGACCTCCGGCTCCTGCTCCTCTT  
30 AGCGGCCACCGCCCTCCTGGCCCTGCTGGCAAAGAAGGCAGCAAAGGCCCCCGCGGTGAGACTGGCC  
CCGCTGGGCGTCCCGNGGAAGTCGGCCCCCTGGTCCCCCTGGCCCCGCGGGGAGAAAGGGAGCCCCCT  
GGGCTGACGGACCTGCTGAGCTCCTGCACTCCTGACCTCAGGTATTGCGGACACGAGGGGG

>'990729A-036.scf' came from CONTIG 30 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-036.scf"(55>461)  
35 GCACGAGGGACTGACAATGATCTTATCAATATTCTTGGACCCCTTTTATCATCTTTCAACTAAAAGTTT  
CAAAACACAACCTTTTATCACAATCCAGAACTGACACCAACAAAAATATTAACCAACACCCCTTGA  
GAAACAAAATGAACGAAAATTTATTTACCTCTTTTATTACCCCTGTGATTGTAGGTCTGCCTCTCGTGA  
CCCTCATCGGACTATTGCAAGCCTACTATTTCCACATCAAACCGACTAGAAGGCATCGCTTTGTACCC  
TCCACATGAATACTCTACTTGTATAAAACAATATGAGTATCACAATCTTAGGACAAACAGACATTATA  
40 TTATATCTTGTCTTTTGGGAGCACAACCTACTAGCCTTACCCCTCTTCCACCACACACAT

>'990729A-037.scf' came from CONTIG 31 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-037.scf"(55>532)  
GCACGAGGGCCCTCGGCCCATTTCGAGTTCAGACAGCGACAGTGATAAATCCACAGAAGACCCCCCA  
45 ATGGGTGAGCCTCACCATCACCACCCCTCCAATAGAGTGAGCGAAGCTGCCATCCTTCCCAGCATA  
ACTCCACCTAGCCCTTCATTTGCCATAATATATGAGAGCTAGAAGGGCCCTTAGGAAGCCTGTGCTATT  
CAATCCCCCTCACTTTATAGATGGGGAACTGAAGCCCAGAGCCACTAACCCAACCAGATTCCCATCCG  
GGGGCCCTTCATTTATCACTTCACCTTTCTCTTCTCATTCTCCTTGGGGAATATCCTTTAAGCCACTGT  
GTCCTAAGGCTAGTAACTGCCAAGGGAAGTGCAAGGGGGGGCAGGGCTGTGGGCGCTGGGGTGCAC  
50 ACGCGCCAGAGTGGCTTGTGTTGAGGGTGAGGAATTTACGCCAGACGGAAAGCCAGCTTGAGACCC  
CT

>'990729A-038.scf' came from CONTIG 32 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-038.scf"(49>243)

GTATGAAGTAAGGTTTTAGTTGGTTCAAATGATTCCAAATGGGGGGCGGTTGGCTTGGCATAACAGAGG  
ACACTCTGGGGTGTGGGAAGGTGGGGAAGGAAGGAGAGGGCCGCCTGCCGGGGTTGTGTGTT  
TGAAGCTGATCTCCCAGCGGCCCCGTGGCGCCTGGCCTGCGTTTTGTGTGAGTTGAAAG

5 >'990729A-039.scf' came from CONTIG 33 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
039.scf"(1>603)  
CCGGGCGGCGGGCGCTCTATAACTATTGGGTCCCCGGGCTGTTTTTTTCGGCACGAAGATGATGTTG  
AATGGTGTGTGTGAGACCTACAAGACCTTTTATTAATAACACCCAAAAAAGTCGTGCTTTTATTATG  
10 GGGGACGGAATACAAAAGGAGGAAGGAAAGAAACACCTGGGGGAATGGGCGGATTGGGCCTTAGAG  
GAGGGGGTGAAGCAGGGGTGGGGGTTGTGAGTTTTGTCAAAGGAACGCACTGGTCGTAGCCAACA  
CCCCCCTTCCAACAACACAGGAGATGACTGTACACATGGACATCACCTGATGGCCAACACTGAAATC  
AGATTGTTTTTTTCTTTGCAGGCAAGGAGGGGAAGCCCTTCCAGCCGAAAAACAAGACCGGGTGC  
GAGATGTGGCGAACACATGTACTCCCTTTGGCAATTCACACTCAAATGAAGATGTGGGGAAACCACCA  
15 CCCCTGCGGGGTGCCCTCCTTAATCCTTTTGTCTCATTTGGAGGTAATTGGCTTTAGGCTGGTCCGTTGT  
CGGGGCGGCGACCTTGTGGGGTCTGTGCTTGTTCGGCCCCCCCCCCCCGCCAAAC

>'990729A-040.scf' came from CONTIG 34 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
040.scf"(39>122)  
CGGGCTGCAGGAAACCGGCATACGAGGGTTGAAGTTGTATTGGTGTCTTTTGTAGACAATACTAGAAG  
20 TGTTTTTATTATTAT

>'990729A-041.scf' came from CONTIG 35 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
041.scf"(48>56)  
TTTTTTGGC

25 >'990729A-042.scf' came from CONTIG 36 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
042.scf"(46>511)  
TGGTTTTTTTCAGTTAAAAAGGCAAAAACCTTTATTTAGTTTTTTGGGGGAAATACAAGATGCATGTAAAC  
ATAAAATACAAAACAAAACAACCCAAATCTTACAGTCTAGAAGCATGCCAAGACAGAACATTTTCTGC  
30 AGACCAAGTCCCGTCAAAAGGATAAAAGGCGACCTGGAAAGGGGGGGGGCAAGGGGCTGGGTCCCTT  
CCCCAAGGACACTGCTTTTTGTGATGAGAACAACTGAAAAAAACCAACCCATTATAAAAATATAGAAA  
CTGAGACAGTTTACACCACCTGGGCCTGGAATTTTTAGCCTCGACTGCCTGATTCATGTTCTTTCTTCGT  
TCTGTGTGAGGAGAAAGGGATGACCCCGCAGCCCCAGGCCCTGGGCGGGGGGGGGGGGGGCACGGGA  
GAGGCCCAAACAACAGTGCTCGGCAGCAGAACCCAACCACTACAACGCCCCACCGCT

35 >'990729A-043.scf' came from CONTIG 37 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
043.scf"(55>565)  
GCACGAGGCTTGCCCGCCACCCGTGCGCCAGTCCGAGAGGCCAGCCAGTTCTCCCGGTCTCACTG  
CCCGCCGCGCGGCCCGTCCCCCACTGCAACCATGGACGCCATCAAGAAGAAGATGCAGATGTTAAAA  
40 CTGGACAAGGAGAATGCCATCGACCGCGCAGAGCAGGCTGAGGCCGACAAGAAGCAAGCTGAGGAC  
CGCTGCAAGCAGCTGGAAGAGGAGCAGCAGGCCCTCCAAAAAAGCTAAAAGGACGGAGACGAGNGG  
AAAAGATTCTGATCAGGAAGGATGCCAGAGAACTGAGCAGCTGAGAAGAAGCACTGTGCTGAGCAG  
AGGGCCTCCTGACCGGCATCACTGGAGAGAGAGCTGACGGCCAGAGCTCTGCTCAGCCGAGAGCGGG  
GAGTGAAAGAGTGAGAAGGAGAAAGATGAGTCATGAACGACTTGAGAGAGAAAAAGAGTGAGAAGCAT  
45 GAGAGCACCATGCGGATCGACGAATGGAGGGCGAACGGATCGAG

>'990729A-044.scf' came from CONTIG 38 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
044.scf"(49>550)  
CCAAGGACGCCTTATGACTCCGTTTACTAAATGTACCACTCAGACCTGCAGGCCTTGCTTGGGGTGGG  
50 ACCTTGATACTGGAGTTTTGGTTATTAATCCTTCCTCTGACCCTAAATTCAGAACACAGAAAGGGA  
TCCAGTCAGGGAATGGAAGGAAATCTCACCACGAAAGGCTTAAGTAAACTCTTAAAAAGCAGTTGTAT  
TGAGGTATTTTTTAAAGTGCACAATTTGATAAGTTTTGACATCTATATGAAATCATGGCCACAATCAAG  
ACATAGGTGTATCTCTCACTGCCGNACGTTACTGCTGAAGACGTCGTTTGCTATTACTCTCTCAGAATC  
TGAGCACTGNAGATCAGAGACTGATTACAGGGCCCTATGACCTGTCCTATCTTCTAAGACCGCGAGAG  
55 CCACAGACTACAGCTCTGAAGAGATAACGGCCAAAGACTTGACGAAACAACAGCTTCTCAGACTTTA  
TATGGTGATAGACGAGACGAGAA

>'990729A-045.scf' came from CONTIG 39 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-045.scf"(55>561)

5 GCACGAGGCTTATCTCCAGGTGCGTACGGGAGCTGAGGTGGGCGAAACTTCGAGGGGTGAGGAGAGG  
GTGCCGGGATCCAGGTGTGAGAGAGGGGTGGGCGTGAAGGCGAAAAGAACGGGGCCCCCCCCTTTCCG  
GCCTGGAAAGTAGTTTCTGTGGGTCCCTGGGAACGTCGGAATACCAGATCTCGATCCGTGGGGGCGGG  
GTCCCTGGGGGAACCTTGAGCGCCCCCTTCTGGGAACCGGCGGGTCTGTTTCGACGGGACTGCTGTTGGG  
GCCTGATTGGTTAGACAGACGTTCCCCGAAGCCACGGGAAGCCCTACCCGCGGGGCGTGGGTGGGGG  
ATCCCTACTTAGTACTCCTGCCTCTCCTGCATCGCAGCCCCCTCCCTAGTGCATTGTCCCTGTCCGGGCCA  
10 TNAGACATGCACCACCACGCGGCGCTCTGTTGAGAAGGAAGGACCTCGTCTCAGCTTGCTGGGAGAAC  
CGAGCCCTTGCTCGCCACAACGGAAAAGAGAG

>'990729A-046.scf' came from CONTIG 40 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-046.scf"(55>533)

15 GCACGAGGCTGACATCGGCCTCCTGCAGAGCCTCCAGAACTTGCCCGTCACGGCCAACCGGATCGAGG  
CGCTGCCACCCGAGCTCTTCCAGGGCCGGAAGCTGGGGGCCCTGCACCTGGGCAACAACGTGCTGCAG  
CCGCTGCCCTCGCGGGTGGGCGAGCTGACCAGCCTGACCCAGATCGAGCTGCGTGGCAACCGACTGGA  
GTGCCTGCCTGTGGAGCTGGGCGAGTGCCCGCTGCTCAGCGCAGTGGCCTGGTGGTGGAGGAGGACCT  
GTTAACACCCTGCCCTGAGTGAAGAGCGCTCTGGAGGTGACAGGAGCAGCCTGAGTCCATGCATGAG  
20 CACGGTGGCCTGGGGGCGCCGACCCGACCCAGCAGCCTGACCCGAACCAGAGCGACGACACCAGCA  
CCTGCAGAGGCGCGGGCTGNCGACAAGACGACTGAGGTGCCCTTTCTGGATAGCCCCAGCGGCGCG  
AGGAA

>'990729A-047.scf' came from CONTIG 41 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-047.scf"(55>544)

25 GCACGAGGCTCGCTCCGGTGTCCCCGCGCCAGAGACACAGCAGCGCTCCCTCTGCCACACCCACCGC  
GCCCTCGCGCTCGCCTCTCCTTCCGGAGCCAGTCCGTGCTACCGCAGTCGCCCAGCCCACCACCCT  
CTGCAGCCATGTCCACCAGGTCCGTGTCTCTCCTACCGCAGGATGTTTCGGCGGCCCCGGCACCG  
CAGGCGGCCGAGCTCCACCCGGGCTACGTGACCACATCCACCCGCACCTACAGGCGGGCAGGCGCTG  
30 GCCACCCCGCCGACCTTACACCTGTCCCGGTGGCGGGTTCGCCAGCGCTCTGCCGGCGCTGGGGGGG  
GTGCGGCGGCGGTGTGAGACCGGGGACTGCTGTGGCAGCCTCACACGATCAGACACCGACCACAGAG  
GAGCGAGACCAGACCGTCCACACCGCAGGCGCTCGACAAAACAACGTGCGACGAGGCTAGGCAGCAG  
GGCGGGACTTCAGAG

35 >'990729A-048.scf' came from CONTIG 42 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-048.scf"(46>593)

TGGAATTCGGCACGAGGCACCAACCGATTTCGACCAGTTATTTGACGACGAATCGGACCCCTTCGAGGT  
GTTGAAGGCAGCAGAGAACAAGAAAAAAGAAGCCGGCGGGGCGGCGTTGGGGGCCCTGGGGCTAA  
GAGCGCAGCTCAGGCCGAGCTCAGACCAACTCCAATGCGGCGGGCAAAACAGCTGGGTAAAGAGTCC  
40 CAGAAAGACCGCAAGAATCCGCTGCCCCCAGCGTCGGCGTGGTTGACAAGAAGGAGGAGACGCAGC  
CGCCTGGGCGCTGAAGAAAGAGGAATAAGACGTGTTGGAAGAGACCTGATCAACAACCTTCGGGTGAA  
GGGAAGATAATGAAGGAGACCGAAGGCGACCACCTGTGAAAGAGATTTCGAAAGCCATTGAGAAAGG  
TNGAGGAGAGATTTCCGTGATGACGATTTTGCCGCCTTCCGAGCCGGTGGTCTGGAGGGCGGGAGCCG  
GACGGGAGGGCGGAGAGCTTGTCTCGGCAACGGATTGTAGCTGGGAGGGGACGCCGAGCGGGCAAGG  
45 GGGGGATGAACC

>'990729A-049.scf' came from CONTIG 43 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-049.scf"(49>505)

50 TCTTGCTGCCGGATCTGGCTTCCGTGGGGACCTCCCTTGATGAATATGGCCGTCCTTTGCTTATTATCA  
AGGATCAAGACCGCAAGTCTCGATTTATGGGACTTGAGGGCCTCAAGTCTCATATAATGGCAGCAAAG  
GCTGTGGGAAATACAATGAAAACATCGCTTGGACCAAATGGGCTTGATAAGATGATGGTGGATAAAG  
ATGGAGACGCGACCGTGACCAATGACGGCGCCACCATCTTAAGCCTGAGGACGGTGACCCAGACGG  
CAGCTGAGGCTGAACTGCCAAATCCAGATGTGAGAGGGAGAGGACCACAGAGGGTTGGCTGCTGCGC  
CTGGGGAGAGCGAGAGAGCTGGCCGGGATGACCCACGAGGCCGCGATACAACGCGGCGCTGCTTGAA  
55 ACCGACAATANGACGGGCTGAGACGAAAACGTGCCCCCTCAAGCAGACCGCT

5 >'990729A-050.scf' came from CONTIG 44 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-050.scf"(46>198)  
 TTGGGTTTACATCTCCCCACATTTTCATACCAGTATTCCAACAGATTCTTTATTACTTAAACCCAAAACC  
 ACTTCAAACCATTACCCTTGGATTGGGACTTAGCCTTTAGCTGTGCACACGGAGAAAATTCGCGCCAC  
 ATTTGGGCCTCCACAC

10 >'990729A-051.scf' came from CONTIG 45 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-051.scf"(45>193)  
 TTTGAATTCGGCACGAGGCTCGGGTTTTTTTTTTTTTTTTTTAGGTTTTTAAATCAACTTTTCCAATAAG  
 CAACTAGGGTTAGCCACATAAATATGCTACCAATAAATGAGAACGCTTAATGGCTTATTACATGCTA  
 TGTATGTGCTT

15 >'990729A-052.scf' came from CONTIG 46 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-052.scf"(45>513)  
 TTGGTTTTTTCCTTACTTGGAGATCTTCTATATAAAATACTGTAAATGACATCTTTTCGTACGGACCTGTTC  
 GAGCGTTGCTTTCCAGAGCCCACGAACAGTGCTGGCCCCGATCTTGGGCTCTGGCTGCCCCATCCGCGT  
 GGAGCCCTTGCAGGAAGCCCCGGCGAGCAGAGGAGCCGCGCCTGGGTCCCAGCAGCGCTCACTAGTC  
 TGTCATTTGGCCCGGNGCGGGCTCGTCGTCATCTTCTTATGGCCAGGATGTACTGACTAAATCTGGTTA  
 GCAAATCAGACCTCCTCCCTTCAGAGCATAACAGGTCATCTCCTCAGCTTCCTCCACCGAGCTCGTGGGA  
 20 GGGGCGGACCCCGGGGCTTGAGGGGAGGGGGAGCTGCCTCCTGGGAGCTGAGCCCTCCAGACAAACC  
 TTCTTCTCCTCGCATGCAACAGGCAGACCCGCTTATCGTCATCACTTCAAAAGAAGAGC

25 >'990729A-053.scf' came from CONTIG 47 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-053.scf"(56>573)  
 GCACGAGGAGAGAACTAGTCTCGAGTTTTTTTTTTTTTTTTTTTACGAACGAGGCAATTTATTAACCCAG  
 CATCATTTGTTCTAATGCTTCTTGTGGCAGCTGCCACCTGTCCAGCGATTCTGTCCAGATCTCTCTGT  
 CCTGAGGCGTCAGTTTGC GGCCCCCATCTTGTTCCTTTCCACCATTTTCAGCCCCCTCCAGGGCTTGGA  
 GGACCCGCGGGGCCACGCTCTTGGAGCCCTCTGTCTGAAGTGGGTGGGCATGACGCCGTTCTCTGGCGC  
 30 CCCCCATAGATCTTGGTCATGGAGCCAACCCACGCCACCCCGGGGTACAGGGGGCCGNNGCCGGGA  
 GCGCTCGGGTGTAGAACAGTCTCANGTAGGGAGCAGTTTTTATGCTGGCCGCTGACGCGTCCACCATC  
 AGGACTTCAGTCTCCGACTTTTGGGAAGCTGCAAGCTTGACACTCTGCTGTGAATCTTAGGCTCTGCCT  
 CAGGCCGGGGTCCGTGTAACACGAACGGGGACGTCCGC

35 >'990729A-054.scf' came from CONTIG 48 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-054.scf"(56>577)  
 GCACGAGGGATTCAAAAAGTAATAAGCAACCTTTTGAACCTATGATTATTTATGCACACTTCTAGTTTT  
 GTTTTGATATTTAAGAACTGTTGATCATCTAAAGTTTCTATGCACAAAGCACTGGCATCTTCAAGCAAT  
 TTAATAATTTGAGAATATCCATCAAAAATTCTTACCTTCTGGAGATGACTTTGTACATATAGAGTTATT  
 GAATAAGCATGTTGTGCACCTGGAACCAACATAGGGCTGTAGGTCAATTATACTTTCAAAAAAAAAAAAA  
 40 GTTCTTGCCTTCCTTATTCTCAAGCATCCCAAATTTTGAACCTCCNTCTTTCTGGCCCCAATCACCAAA  
 GAAGATGGACCCTGCCAGCCCTTGCTTTGAGCCCCCTCCCTCCTTCTCCTCAGCTTCTTGAGACGCTA  
 TATGAATGACCACACNACAGAAAAACACTGGTTTTCTTAAAGGTAGTTCCGGGGGGGGGGGAGGCC  
 AGACCAGAGGCCGACAANACAGAAATGGAGAAGACGNTTC

45 >'990729A-055.scf' came from CONTIG 49 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-055.scf"(56>534)  
 GCACGAGGCAAGTCTCTACATTTGTTTCTCAGGCAGGTTCTAGTATTTTTAGGGGCAGGGTCAATCGAA  
 ATTGACCCCTCAGATTAGTCAATCCAAGTTACTGACATTTCCAGTATTACTTAGTATTTTTTGTGTTAT  
 GTTGGCGAGTAGGCTTTTCATATTTTATACAATGAAAAAATATAGCCCTTGGGTGTATCTCTAACAG  
 50 AATGTGCTCATCGACATTTACTAGCACAAACTTTCAGTTTTGATTTTCATCAAACCTCTACTTTAACTGAC  
 CCATATTATTCTTATCGCAAGACTTAGTGAGAAAGAGAAAGCAGTTCTGACCATCGGAAAGGCCTG  
 CCAGCTGCTTTGATTATAGGGGCTGCCGGTCCAGGACGNTGGCACAAACCCACACACAGAGACAG  
 GCCTCGGATGGAGAAGGANAAAGACAACAAACAATACATTGTTAGGCTACAGGAAGGAAACTACGC

55 >'990729A-056.scf' came from CONTIG 50 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-056.scf"(56>450)



AAGAATTTAAGAATATATTTTCCATAAAAAACAACAAATGAGAACCTCTTACATAAAAATTCTAAATACA  
TGCTAAATATATTAGGAAAAACAACATATTTTGGACATTGTTATACATGCCTATAAAAANGAGTTGGGG  
CTGTTAAAAAACTAATAAAATGCTACTACCANACTATATACAAAACCTCTTAAAACTAGTTTTCTCTTAC  
ATATGGCTCTGAATATTTATGACACAACTATTACGAACAGACGGGATCATTGAGATGAGCAAATTA  
AATTATTCCCGGAAAAAACCTCAGTTTCATTTTCCTATTAATAAGTGNTAATACTGGCCATCGTGACGC  
ATAAAAAAG

>'990729A-062.scf' came from CONTIG 56 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
062.scf"(50>470)

GGAGAGTCGGTGGGATCTCTTTACGGCCTCTGGACTGGAGGCCGAGCCCCGCCCCGCGGCCGAGCCCC  
GCGCCCCGCGTCTCCGGCGGGGTGCTCTCCGCAGTTTCCTGGCTTGGAAGCCATGGGAACATGGCGAG  
GCAGCGGTGGTTTAAACGGGAAGGACGGAGACTGTTAGCCTGTGAACGAAAGCGAGAGTGAGCCGCCT  
CACGCTCCGGACCAAGAGTGATCTTGAACCTTGTGGCTGCTACTAGATTTTTGCCCACACCTCCTCGTAT  
GCTGCGGCTTCTCCATGGAGTGGGGCCAGGGTGACCGGGGACTTGCCGCAAGTCAGACGGCTGCAGGT  
CACAGCAGTCCAGNCTGTCCACCTTTGAGCGCGGGCGCATGTCCTTCCCACCCGAGACCCCGCTGGC  
TTGACCCAAAACG

>'990729A-063.scf' came from CONTIG 57 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
063.scf"(47>374)

TCTGGTTCGTGTTTTTTTTTTTTTTTAAATTTACTAAGTCTCCTTTATTTTTGTTACCAATAATAAAAC  
ATTTGGGAGAGATTTGTAAAAACCAGGCCAGCCAGGGCACTGAGATACTGGGACAGGGTATTTCCCA  
TGAGCATTCTTGGTGGGGGTGAGGCCGTAGCTCTGGCTCCATTCGGTTTGGTGGGCTGTTGCCTCGCC  
CCCCTTTGCTGCCCTGTAGAACACACGGGGGGGACTGGGGGCGGGCAATGGATCCCCTTGCCGGTCTT  
TGCGCCCGGCTTCTGGGGTTCCTCAGCTGACCTCCCTCGTTTCGTTTCGGGGG

>'990729A-064.scf' came from CONTIG 58 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
064.scf"(51>548)

GGAAGTGTGAGAAAGGGCAAGGACCCCAAGGGCCCCGAGGGTGAGGAGTCGGAGGAGGAGTGGGCT  
CCAGTAGAGAAAAATCAAGTGCCCCCATCGGGATGGAGTCACACCGCATTGAGGACAACCAGATCC  
GGGCCTCCTCCATGCTGCGCCACGGCCTGGGTGCACAGCGAGGCCGGGTCAACATGCAGGCTGGCGAC  
ACTGAGGACGACTACTACGATGGGGCGTGGTGTGCTGAGGATGACTCCCAACCCAGGGATAGAGGGG  
ACACGAGAAGACCACAATTCACAGCGCCACACCAGGCCGACTCCGCATCATGACACTTGACCCCTC  
TCGGGGCTCACACGACGCGAGCGGGGGATGACACACGCTACAGAAAGCTTCAGGGACGGATAGACCGC  
CGGCGACGACTCCGGCGNAGGCCGTATCCACACCTCCCGAAGAGCGGCGCGGAGGCGGGGCCGGC  
CTGCCGTCACGCGAGGGGACCGGCCGCT

>'990729A-065.scf' came from CONTIG 59 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
065.scf"(48>589)

TAGGCAACTCTATCAAACGCTTACTAATTGGAAGCCTCTTCGCAGGATACATCATTTCCAACAATATTC  
CTCCAACAACAATTCCCCAAATAACTATGCCCTACTACCTAAAAACAACAGGCCTAATTGTTACAATC  
CTAGGCTTCATCTTAGCCCTAGAAATCAGTAATATACTAAAAATCTAAAAATCACTACCCCTCAA  
CGCCTTCAAGTTCTCAACCTTGCTAGGGTATTTCCCCACAATTATACATCGCCTAGCTCCATACATAAA  
TTTATCAATAGCCAAAAATCAGCATCCTGCCTCTAGACCTATCTGACTGGAGCCATCCTACCAAACCC  
ATCTCACTCGCCCAATAAAAGCTGTACCTGGNCACAAGCAAAAGACTGATCAACTTATTCCTTCCTTCT  
ATCACATCCTATAGATATCTATTATTACAGAGTATTCATATACCACACACATAAAAGACACCATACAT  
ACTACAGAGCTACTGTAAGCGAGTCTTGCTTACTAAGACAGATCCGTTATAATACATCCTAN

>'990729A-066.scf' came from CONTIG 60 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
066.scf"(44>143)

TTTTTTTGCCAGCCACTTCTACCGGCAGATTGGGAGGCGAGCGCTGGGTGTGGAACATCATTCTACCA  
CCAGTCTCTTCTGTGCCTTCTTCCTGAC

>'990729A-067.scf' came from CONTIG 61 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-  
067.scf"(49>55)

ATGAATT

```
>990729A-068.scf' came from CONTIG 62 at offset 0;"E:\SEQUENCE\export\EST_db\990729a\990729A-068.scf"(57>391)
GGGCACGAGGCGGTTGTAACTGGGGTATGTTGGTTTCGTGGAGATGCCCATGAGTGTTTTATTTAC
CTGGTGGCCAGAGCTGAAATGGAAGTATTGAAAAGTAAGGTGTAAGCTTAGATGGAAAGAAGATCT
TGGTAATAGGAGCCCATGGGTCTTTGAAAAGCCACCCTACATTGTGTGTTCCAGAGAAAAGGGACCAT
GACAATGAGCTACCAAGTGGAACAACCTCAGCTGCAAGACAAGCTACAGGAGGCTGGTCTTGAGGTC
TTGGGCTCACCCAAGCCAGAAGAGATCCCCCTTCTTGGTTCAACGGGAAGTACTGTTTAAACTG
```

```
>'990729A-069.scf' came from CONTIG 62 at offset 2;"E:\SEQUENCE\export\EST_db\990729a\990729A-069.scf"(59>496)
GCACGAGGCGGATGTCAACCTGGGGAAGTTGGTCCGAGGAGATGCCCATGAGTGTTTTATTTACCTG
TGGCCAGAGCTGTAATCGAACTTCTTGAAAAGTCAGGTGTCAGCTTAGATGGAAAGAAGATCTTGGA
ATAGGAGCCCATGGGTCTTTGGAAGCCACCCTACAATGTCTGTTCCAGAGAAAAGGGTCCATGACAAT
GAGCTCCAGTGGA AAAACACCTCAGCTTCAAGGCAAGCTACAGGAGGCTGATATTGTGGTCTTGGGCT
CACCCAAGCCAGAAGAGATCCNCCTTTCTTGGA TTCAACCGGGA ACTACTGTTTTCAACTGTTTCGCATG
ACTTTCTATCAGGGAAGGCTGCATGCATTTCTTCTGGCGTCCATGGTATTAGCCCCATCGCCAAGATGT
GGNTCTCCTTGCTGCTGCTCTGCGAATA
```

```
>'990729A-070.scf' came from CONTIG 63 at offset 0;"E:\SEQUENCE\export\EST_db\990729a\990729A-070.scf"(55>274)
GGGCACGAGGCGTGTTTTTTTTTTTTTTTTTGTACTGCTCAACTTGGTACTTATGAAATGATCATTACC
TAATGGTCCACTAAATTTACATATTCAGGAAATTATATATAGAATACTGCAAAAACACAGTAGAAGAC
TGAAGGTGGCCCGGTTCAAGCTCATGAAATCCCTTCACTCCCAAGCATGTTGTCTTTGAACTCCAAAGT
GAACTGGCTGGAC
```

>990729A-071.scf came from CONTIG 64 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-071.scf"(54>478)  
CAAAGAGCTGCCCCCATCCGAGTTCCTGCAAGTGGGCCGAGGGCCACGTGGTCTGGGGGCTGAACGTG  
GTCGCTCCCCCAGCGGGGGCGGGCCGGTGCAGGGCCGACCGGGGTTACCAAGGATCGGCCCGGGTC  
AGTGGATCGGCACCCGCTGGGCCGAGGCACCACGTGGTCCGGGGCTTGATGCTGGTCCAACCTACCTA  
GACATGACTTTTCATCCTTGTGCGGGGAGCAGGGACCTGTCCGCGGGGGATCCACACGCTGGGCCCGGG  
AGTTCGACATTTACCGAGAGGTGGGCGGGGAGCCTGTGCCCTGTGCCAGGGACGATTCCAGCAACGGC  
TTCCCCGTGCCAGCATGGGCCAGCCCCACGNGCACCCACCAGAACCCAAAACCGATCTGCGTNC  
TCACGCTGACCCGAGACC

>990729A-072.scf came from CONTIG 65 at offset 0;"E:\SEQUENCE\export\EST\_db\990729a\990729A-072.scf"(54>526)  
TCTCGCGAGATCCGCCTCCTCAATACCAAGCGCCTGTGTGTGGCAGAGCCGGGGTGAGACGAAGAGAC  
AATCCTTCCCAGCCGCCAGGATAATCAAGAGTTTTGGCCGGACCTTCGAGCACACACCGAGATAGTGA  
GGAGCCAGACGAAAAGCACAGACTATGGCGGCTGAAACGGATTAAATAAGGAACTTAGTGATTGGGCC  
CGCGACCCTCCAGCACAAATGTTCTGCAGGTCCAGGGGGGATGATATGTTTCATTGGCAAGCCACAATT  
TGGGACCTAAGACAGCCCATATAGGCGGTGTATTCTTTTGACATTCATTTCTACGACACCCCTCAACC  
CTAGNTGCATGACAAACAGAATTANATCCAATATAACGNAAGGCGCATTGTCTGAATTCAGACCAAGTGT  
TCCTGTTACATTTAAGTCTTTTCATTGTTATGTTGGACCAACCAAGACCCTAGGCGGATGCGACT

>990809A-089.scf' came from CONTIG 1 at offset 0: 'C:\export\EG\_DB\990809a\990809A-089.scf'(60>576)  
GCACGAGGCAGAGAGTCATAAAAGGTTTTTAGCAGAGGAGTAGTCTTTTTAGAACAATGATTCCGACA  
GTAGTATATGGAAATGGGAGCAGATACAGATTTAGGCAAGGAGGCCAGAAGACGATCTCAACAGTAG  
TAACACTGATAAGAGGTATTGGTGGTCTAGATTAGAGTAAATGCAAACTAAGGTTAGATCTATTAA  
AATACATGACTCAAAGGAAAAATTGAAGACCTAAAAATTGGCTTCAATCTATTTAAAGAAAAAAAAAA  
AAAAAAAACTCGGGGGGGGCCCCGGACCCAATTGGCTCTAGTGAGTCGTATACAATCACTGGCCGCCGT  
TTACACGGGGNGACTGGAAAACCTGCGTACCCACTTATTGCCTGCAGCATCCCTTCGCCGCGNCGT  
ATAGGAAGAGCCCGCCGTCGCCCTTCACAGTGGCAGCGATGGGATGGAGATGTAGGTATTTTGTAAT  
GCGTTATTTGTTATAGTCTTTTTACAATGCGACGCAATCTTTA

```
>'990809A-065.scf' came from CONTIG 2 at offset 0;"C:\export\EG_DB\990809a\990809A-065.scf"(56>544)
```





GCACGAGGCGCTGACTATTCTCAACCAACCATAAAGATATTGGTACCCTTTATCTACTATTTGGTGCTT  
GGGCCGGTATAGTAGGAACAGCTCTAAGCCTTCTAATTCGCGCTGAATTAGGCCAACCCGGAACCTCTG  
CTCGGAGACGACCAATCTACAACGTAGTTGCAACCGCACACGCATTTGTAATAATCTTCTTCATAGT  
AATACCAATCATAATTGGAGGATTTCGGTAACCTGACTTGTTCCTTAATAATTGGTGCTCCCGATATAGC  
5 ATTTCCCGAATAAATAATATAAGCTTCTGACTCCTCCCTCCCTCATTCCTACTACTCCTCGCATCCTCT  
ATAGTTGAAGCTGGGGCAGGAACAGGCTGNACCGNGTACCCTCCCTTAGCAGCCAACCTAGCCATGCA  
GGAGCTCATAGATCTACCATTTCTCTTACCTTACAGAGNTTTCTCATTTAGAGCATCACTCATTACATT  
ATCACTAAGCCCCGCATGCCATACCACCTTGTGAGAACGAATATACGCGACTCTCTACTTGTCTTTT  
GCGCGC

>'990809A-021.scf' came from CONTIG 8 at offset 9;"C:\export\EG\_DB\990809a\990809A-021.scf"(61>617)  
GCACGAGGCTCAACCAACCATAAAGATATTGGTTACCCTTTATCTACTATTTGGGTGCTTGGGCCGGG  
ATAGGAGGAACAGCTCTAAACCTTCTAATTCGCGCTGAATTAGGCCAACCCGGAACCTCTGCTCGGAGA  
CGACCAATCTACAACGTAGGTGTAACCGCACACGCATTTGTAATAATCTTCTTCATAGTAATACCAAT  
15 CATAATTGGGAGGATTCGGTAACCTGACTTGTTCCTTAATAATTGGTGCTCCCGATATAGCATTTCCTCC  
GAATAAATAATATAAGCTTCTGACTCCTCCCTCCCTCATTCCTACTACTCCTCGCATCCTCTATAGTTGA  
AGCTGGGGCAGGAACAGGCTNGACCGCTACCCTCCCTTAGCAGCAACCTAGCCATGCAGGAGCTCAT  
AGATCTACCTTTTTCTTTCACTAGCAGAGTTTCTGATTTTAGAGCATCACTCATACACAATATAACAAA  
GCCCCGCATGCCATACAACCTCTGTGTGATCGTATATACGCGACTCTCTCTTGCTCTGTTGAGCGGTA  
20 CAGCTTA

>'990809A-006.scf' came from CONTIG 9 at offset 0;"C:\export\EG\_DB\990809a\990809A-006.scf"(51>493)  
TTGGAATTAGGCACGAGGACCCACATACCTTCAAAAGAAAACGAGGTGCTGACCTTGGCTGTGCTCTT  
25 CCTGACGGGGAGCCAGGCTCGGCATTTTGGCAGCAAGATGACCCCCAGTCATCCTGGGATCGGGTGA  
AGGATTTTGGCACCGTGTATGTGGAAGCAATCAAGGATAGAGGCAGAGACTATGTGGCCCAATTCGAA  
GCCTCCGCTTTGGGAAAACAGCTCAACCTGAAACTCCTGGACAACTGGGACACCCTGGCCAGCACGTT  
GTCCAAAAGCGTGAACAGCTGGCCCAATGACCCAGAGTTCTGGGACAACTGGAAAAGAGACCGCGT  
CGCTGAGGCAGAGATGCCAGGACTGAAGGAGTGAAGAGAGGGCAGCCTACTGACGGTTCAGAGAAG  
GACGAGAGTGAGATTACGCGAAGGGGGCGTGGCGGAGT

>'990809A-057.scf' came from CONTIG 9 at offset 17;"C:\export\EG\_DB\990809a\990809A-057.scf"(54>482)  
GACAGGATCCCTTCAAGAGAAGCCGGGTGCTGACCTTGGCTGTGCTCTTCCCTGACGGGGAGCCAGGCT  
CGGCATTTCTGGCAGCAAGATGACCCCCAGTCATCCTGGGATCGGGTGAAGGATTTTGGCACCGTGTA  
TGTGGAAGCAATCAAGGATAGTGGCAGAGACTATGTGGCCCAATTCGAAGCCTCCGCTTTGGGAAAAC  
35 AGCTCAACCTGAAACTCCTGGACAACTGGGACACCCTGGCCAGCACGTTGTCCAAAGTGCGTGAACAG  
CTGGGCCAGTGACCCAGGAGTTCTGGGACAACTGGAAAGGAGACCGCGGTGCTGAGCAGGAGAT  
GCACAGGACCTGGAGGAGTGAAGCAGAAGGCAGCCCTCCTGACGAGTCCAGAGAGGGGACGAGAGT  
GGAGACTACCGCGAGGTGNGCG

>'990809A-066.scf' came from CONTIG 10 at offset 0;"C:\export\EG\_DB\990809a\990809A-066.scf"(62>596)  
GCACGATGGCACTTCTGGCACCTCTAGGTATTGCTGGTCAGGGGGGTGTGGGCGGCCTGCCTGGCCA  
GAGCAGGAGAAAGAGGCTTCCCTGGGCTTCGTGGGCCGTCTGGTGAACCCGGCAAACAAGGTGCTTTG  
GGAGCAAGGGGTGAACGTGGCCCCCTGGCTCCCATGGGTCCCCCTTGGATTTGGCTGTGTCCCCCT  
GGCGAGTTCTGGACATTGTAGGGATCTCCCTGTGTGCTGAATGCATCCCCTGGACGAATAGTTCTCCCC  
45 TGGCGCCAAGGGTGACCTCGGCTGAGACCGTCCCTTCTGGTCCCTCTTGTGCTTTTGGGGCTCCTGTGTC  
CCCGTTCTGTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCT  
CCCCTTTGGTCCGTGTCCCGCTTGCCTAGTCCCCTGGTGAATGTGTGACAGGTACAGTCAAAAGCTTA  
AGGCCACCTTTTCTCTGCTCATGTCCCCCCCCCTCCGTTTCTGGTGTGCTGCT

>'990809A-093.scf' came from CONTIG 10 at offset 5;"C:\export\EG\_DB\990809a\990809A-093.scf"(56>547)  
CTGGCACTCCTGGACCTCAAGGTATTGCTGGACAGGGTGGTGTGGGGCGGCCTGCCTGGTCAGAGAGG  
GAGAAAGAGGCTTCCCTGGGTACTTCTGGGCCCCCTCTGGCGAACCCGGCAAACAAGGTCCCTTCTGGA  
GCAAGTGGGGAACGTGGCCCCCTGGTCCCATGGGCCCCCTGGATTGGCTGGACCCCTGGCGAGTC  
TGGACGTGAGGGAGCTCCTGGGGCTGAAGGATCCCCTGCCGAGATGGCTCTCCTGGCGCCAGGGTGAC  
55 CGNGGNGAGACCGGCCTGCTGACCTNCTGTGCTGCTGCGCTCCCGGGCCCCCGCCCTGTGCGACCTGC  
GCAGAGGNGATGTGGGAGACGGGCTGTTGTCTGCTGTCCCATGCCCGTGTGCCCGGCCCGTGACCCA





GNAACTTNATCAGTTCGGGCAGGCGGCTGCCTTTCCTCTGCCCAGCGTCTTCCTGACCAACTCAGCGGG  
CCCAGATTAGATGCCAGACTCATGTGACTCG

>'990809A-024.scf' came from CONTIG 22 at offset 0;"C:\export\EG\_DB\990809a\990809A-024.scf"(53>501)

TTTCAGCCATCCCTTGGGTTGAAGACAAGCTCACCAACTCCCACACGCCCACCACCCCCCTACCCAAC  
TGGGCAGCCCTTCAACGAGGATGGTATCGAGGGACTGAAACATCTTACCTGTTCCCTGTCTGTCTGGCC  
GCAGGGTCTAGGAGCCCCCAGGACACAGCATGAGTGGGCCTTGGACCGCTACCCCGCTATGGGCCTGC  
AGACTTGGTTCCAAAGGCCTGGGCGGACAGACCGCCAGTCACCACCTTACCCCTAGCTTGGCCACCC  
CAGGGCGACAAAGAGCAGCAGGGGGCGGGGGCAGCCGCGCGGACAAAGCCGGATTTCCTGGTTCGCG  
GCTGGCTCTGTTTCCCTGCGCTCCCCCCCCCGCGTGTGTTCCGCGGAGCTGACGTCTAACGGGGAGGGT  
AGAAGGACAACCCGCAAGGTGTGGGATTGAAGGAATGTGGC

>'990809A-020.scf' came from CONTIG 23 at offset 0;"C:\export\EG\_DB\990809a\990809A-020.scf"(58>610)

GCACGAGGGTCAGTGTTAGCATCAACACCACGCTCCCATCTACCATTGAGCCTTGCATCTTGCCATCCC  
CATGGCAAGGAAGCCTTTCTCTGCTCAGATTCTCTCTACCCTTGAAGACTTAGCTCAAAATGCAACACC  
TGTATCTGCTTCAGCTCATCCTATCTTCTCAACTCCCTTATATGTTTGTACTTCTTACTTGAATACTTAAT  
CCTATATGCTGGTGAGGGTTACTGAGTCTCTTCTATGTCTCAGTCATGTCTTATCAACAAAGCTGCAAA  
CTTACCAAGAGACAGATCACTTCCACTCCCCAGGGTGCCTATCACAGGTTTTAGTAGCAGAGAGGAGC  
TCAAATCCACTGTTGATTTTCATCTTTGTTCCATTTGCTATTATCAGTTTCAACAAAGAGNAGTATGC  
TCTATACCTGCTTTTCAAAAGAACTAAATCAGAAATATTATAAACAGAGAAAGGTCATCTGTTGCTCTT  
GGCAGAGCCTGACAGNCNTAAACGAAAGCTCANGTCCCAGGAACATGGCCACGGTCGGGGGAGCGTC  
T

>'990809A-025.scf' came from CONTIG 24 at offset 0;"C:\export\EG\_DB\990809a\990809A-025.scf"(55>597)

GGAAGATGTATGGAGACATGGCCTAAAGCCAGAGACAGGGAGAACACGTGAACATTTTAGGCTGTCA  
CTTGAATCGATTACATCTCATTTTTGTGTACACGTGATTTTCAAGGGGCACAAGTTATTTAAATCTGTGC  
TTCTAAGTGGGGAAAAGAAAAATTTCCCAACAAATTCAAAATACTGTGCCATGTGATATTCAAACCAAT  
AGTCCGCCAACCCAGACACTGGTTTGAAGAAATTGAGACTTGATCATAGGACTGTATTAGTGCACAG  
CGCCAGCATGTATGCTAGGAGCAGGGGAGGAGGGCAGCAGAAAGCCTTGTATCTTTGGGGGGGNGGA  
GTGACTGGTTTTGGATGTGACTGAAAAGAAAACTTAGCATGCTCCTGTCTGCCTTAGCTCCAGCACGCC  
GGTGTGCGCCCCACCTCAGAGCGAGCAGTCGCTCTAGCAGACACAATCACTTGACTTTGATCAGACAT  
GTCAGAATAGATCTGCTTAACGACGCCGGCAGCGATGCCCACAGCAATNTTTTGTACGAATTGGGNN

>'990809A-026.scf' came from CONTIG 25 at offset 0;"C:\export\EG\_DB\990809a\990809A-026.scf"(57>601)

AGGAACGAGGCCAGCTCTATGTAGGCAGGGCGGGGTGGAGCTCACCTGCTCCCATGCTCTGGATGGA  
CAGCAACTACTCTACGGGGACCAGGGGCACAAGACTCAGCAACTGGACCACCAGGCACCCCCCAAC  
CCAGAGGGGCTGGAGTTGGGTCTGAGGGTCCCAGGACCAACGGCTGCAAAAACCGGATGTTACAG  
GAAGGAGGCCTGCCTCCTCAGGGCCTCAGATTCTGAAATGCCCAGAGGGAGAGGGTGTCAAGCTGCG  
CTGTGAGCTGGGGGCACGGACCGGGAGAGAGCGCGAATCTGCAACTGCGTTGCGCGTGTGGGCCAAA  
ACCTCTACAGCGGGAGCACCAGCCTTTAGACGGAGAGTGAGGCGGGATGAGCCCCGAAAGCACTAT  
AAAAGTCTCGACGGTTCCAGAGAGCTGCAGGGGCCAGGGGCAAGGACAAGGAGAGCAGCCCGGTGC  
TCTTGATCTATCTATCTGCCATGCCTCCGTCCGTCGCCCTTTTACTTAAATGATTTTAAAGCTCGTCGCG  
CGNCT

>'990809A-022.scf' came from CONTIG 26 at offset 0;"C:\export\EG\_DB\990809a\990809A-022.scf"(60>522)

GCACGAGGCTCCCTGTGGATCCTGTTCCACTTCTGACGGGGCAAGGCAGGTCAGGAAGGTGTAGACC  
ATCCTCAGGAAAGAGCCAAGGCCAGGAAGTCTTCAAGCCATCCGGGGGCTTCGTCCGCTTCTTCTT  
CGGGTGGCGAGAGGGCGCTGGCCACTTTGGGCAGATGGCCTCTGGCTCCATGCACCGGGTGGGGAGG  
CTGAACAGCGCCGTCCTTTGGGTCTGGGCCAACCAACAAGGTGAACGCTCGCCTCGCAGGCGCCCC  
CAGCGAGGACCCCCAGGTCCCCAAGAGGCAGNGGCCACCCCGCAGCTCTGGTCCGCTGCCACAAT  
GAACTACGGGCACGCCTGTGTGGGACCTGCACAACATCTCAGATCTTGAGACCACTACTCCCCAGCAA  
AACTGCTATACTTTCTTTGCTGGCCGGGGCCGGGCGGGGAGGAGGAGGAGGAACA

>'990809A-003.scf' came from CONTIG 27 at offset 0;"C:\export\EG\_DB\990809a\990809A-003.scf"(1>516)

CCTCTCGGGGGGGCCGCTTAAATGGGTCCCCGGGTTTTCGCCGGGCATTTACCCTTCAGAAAACGAGA  
CCACCAATTCTTTCTTTCCCGGCTGGGGACCAGCCAGNGTTCCTGCCACCCAGATGCTGGTGAAGAT

CATGGCAGATATTGCCAGAGGCATGGAGTATCTGAGTACCAAGAGATTCATACACCGGGACCTGGCTG  
CTAGGAATTGCATGCTGAATGAGAACATGTCGGTGTGGTGTGGCTGACTTTGGGCTCTCCAAGAAGAT  
CTACAACGGGGACTACTACCGGCAGGGACGCATCGCCAAGATGCCGNCNAAGTGGATTGGCATCGAG  
AGCCTGGCGGACCGTGTCTATCCAGCAGAGCGATGTTGGGGCTTGGGTGACGATGTGGAGATGGCAGC  
5 GAGGCAACCCCTATCAGNATGGAGACAGGAGATATGATACTGGCCAGGAACGCTGAGCACCGTGACT  
GCTGACGACGACGCCGTGTCGTGCTGGGCTAACCCCGACGC

>'990809A-001.scf' came from CONTIG 28 at offset 0;"C:\export\EG\_DB\990809a\990809A-001.scf"(62>533)  
GCACGAGGCTACCAGTATGGATTCAACCTGGTCATGTCCCATCCTCATGCTGTCAATGAGATTGCGCTG  
10 AGTCTCAACAACAAGAATCCAAGGACCAAAGCCCTTGTCTTAGAGCTCCTGGCAGCTGTGTGTTTGGT  
ACGAGGAGGGCACGAAATCATTCTCGCTGCCCTTGACAATTTCAAAGAGGTGTGCAAGGAGCTGCACC  
GCTTTGAGAAGCTGATGGAGTATTTCCGGAATGAGGACAGCAACATCGACTTCATGGTGGCCTGCATG  
CAGTTTATCAACTCGGGGGTGCCTCAGTGGAAGACATGAACTTTCCGGGTCCACCTGCAGTTGAGTTC  
ACAAAGCTGGGCTGGAGGAGTTCTGCAGAGTCACGCACCAGAGAGGGGAGCGCAGCGCAGATCAGGC  
15 GACCTGACACGGTCTGTGGGGGGTGTGGGGTGCAGACAAAAGTGGCCTGGAAGGGAGAGTGGG

>'990809A-004.scf' came from CONTIG 29 at offset 0;"C:\export\EG\_DB\990809a\990809A-004.scf"(50>557)  
TTTGCAAGAGAGAAGACAAAGCAAATGAACTCAAAGACAAGATGGGCAAGTGGAGAGATGATGGGG  
AAGGATTGGGGAGCTTTGTTCTGCTGGCTCCTCTGGTCTCAGAAATGAGAATTATAATTCCATTCAACA  
20 ATGAGAATGGACAGCAGACATTGGGAAGGGAGTGAGTGACTGATTAGATGAGGGGCACAAATTGGAG  
ATGCCCAGAAACACTAAGTTTCTTAAAGTTACTGGCCTTGAATTTCAAGTGGTAGCCAGCCACTAGAG  
TGGAGTTTATTCTCTATCCTTATTCAGCTGGGAAGCTGGGGGTGGGGTTGAAAGAGTTGAATTTATC  
TAGGTTGTGACTTTGCCAGCAGATGTAGCCACCAATGAGAGAGAGCAAAATAGCCAATAGAAGCTTAC  
TTNTTCTGNAGCCCGNGGNCCTCTGGATGCTACTGTTTCATAGATAACCGCAGCAGAAAGGGAACCGCCC  
25 CGTACAGGAGCTGGACGAATATGCTCCGTAC

>'990809A-007.scf' came from CONTIG 30 at offset 0;"C:\export\EG\_DB\990809a\990809A-007.scf"(52>536)  
TGGCCGGCTCCCGCGGCGGCTCCCGCGGCGGGCTCCCTAGGTTAGTGTGATCTCAACTCAAGAGAAAG  
GTGGGGCTATCATGGCATCTATCTGGGTGGGAAAGCGAGGGACAATAAGAGATTATGCTGGCTTTAA  
30 CCCATCGGGGGATGCTGAAGCGATTCTGTAAGGCCATCAGAGGGAATTGGGGACCGACGAGAAAACAC  
TGATCAGCATTCTGACTGAGAGGACGAATGCACAGCGGCTGCTGATTGCTAAGGAATATCAAGCACTA  
TGTGGAAGGAAGTGAAGATGACTTGAAGGGTGTCTCTGCGCCACTTCAAGCATCTCATGGTAGC  
CCTCGCCGCCACCCGCGAGNGTTCGCTGCGAAACAGCTGAGAATCCATGAGGGCATGGGACAATGA  
GATGCACGATCGAAATCTACCACTGACAGCAGCAATGCAGAGACGGCATCCTCTTACGACAGAGGA  
35 CTGAGATGGATA

>'990809A-030.scf' came from CONTIG 31 at offset 0;"C:\export\EG\_DB\990809a\990809A-030.scf"(48>602)  
TTTGTGGCAGGATGGGCAAGTGTGCGGTCTTCGTAAGTGGCAGGAAGCTCCGCAGCCACCGACGAGAC  
CAGAAGTGGGATGATAAGCAGTACAAGAAAGCCCATCTGGGCACAGGCCTGAAGGCCAACCCCTTTTG  
40 GGGGCGCTTCTCACGCTAAGGGAATTGTGCTGGAAAAAGTAGGAGTTGAAGCCAAAACAGCCAAATTC  
TGCAATCAGGAAGTGTGTGAGGGTTCAGCTAATCAAGAATGGCAAAAAGATCACTGCTTTTGTTCCTA  
ATGATGGGTGCTTGAATTTTATTTGAGAAAATGATGAAGTTCTGGTTGGTGGATTTGGTCGCAAAGGT  
ATGCTGGTGGTGACATTCCTGGGGTCGTTTTAGGTTGGAAAATAGTCATTGTTTTTTTTTGGTTATCAA  
AGCAAGAGGAAAGACAAATATAAATTTGTGATGAAGACGATGAATAATTTTTTTTACAAAAA  
45 ATGGGGGGGCGGCCGCGCCATTGCTTTGGGTTGTTTATTATGGCGGGTTAACGGGATGGAAACTGGGTCC  
ACTTTTGTGCG

>'990809A-031.scf' came from CONTIG 32 at offset 0;"C:\export\EG\_DB\990809a\990809A-031.scf"(1>545)  
ACCACGGGGGGCGTTAAACTAGGGATCCCCCGGCTGAGAATGGCACGAGGGACATTCTACCCTGGCC  
50 GCTGACTCGGGAACCTCAATAACCAACAGCCGATTCAAGGGGCCAGGGCTTTGGTGGGGCACCCG  
ATCCCACGGGCTGACCACACCCCTCACGGAAGCCTCTTACGAGAACCTGCCACCATTTGCCCTGGG  
CAACACGGAATCTCCTCTGTGCTATCGGGACATCGGCACCCCGCGCCACAACAAGGGGGCGCACTAGG  
GGGGGTGGGTGGCGGGTGTGCGCCGGGGAAGTCACGCGCATGCGGGGCACCATCTCCCCGCGCCCC  
GGGGGAGGGTGTCCGCCTCTCTGTGTCAGAGAGCTGAGAGAAGAAAAGAAGAGGGAGCAGAGAGAG  
55 CTGGGCCAGAGGGTTTGGGTTGATGGTTGCTCGCTTCTATTGGCTGGATGCGAGGGACACGCCTGAG

GGCGCGCTCCGGCATCAGGGCGACTAGAGGAGCGAGCTCCCTGAACGCGCGCCACGACACCCGAGGA  
GAACACC

>'990809A-035.scf' came from CONTIG 33 at offset 0;"C:\export\EG\_DB\990809a\990809A-035.scf"(13>36)  
AGGCGGCCGCTCTATGATACTATT

>'990809A-033.scf' came from CONTIG 34 at offset 0;"C:\export\EG\_DB\990809a\990809A-033.scf"(61>588)  
GCACGAGGCCAAAGACACTGAAGTTTTCTGGAACAATGGCAGAAGTTGGGTTTGAGAGGAGGAGTG  
TTCTGTCTTAAAGCATGTGGACCAGAGGTCAGTAGATGATAGAAACATGTAAGTGACATAGTAGTAT  
TGTCAGATGTCAAAGATGCCAGGATGGAGGCTGGGTGGGGTCTAAAGTGGCATTAAATGGGTTAATAA  
ATTGTCACCCCTATCCTCAGTTCTATGGTAGGTGAAATGTACAGTTAGTGTGGGGAGATGTTGTGTTTA  
TTGGGTCTTTTTCTTTTACATAAAGATGAAGATCCACAGGGTTGTATGGGTTGAGGGAGAGAGACAGA  
GAGAAGAGGTACAGAGCTGAAGGGTTGAGACAGGGAGGNAACTGACTCCTTTGGCTATAGATATAGG  
ACGAACCCTATTGATTATTACCAACATCAAGNNGATAGCAACAAAAGCGGCGGGGGGGCGGCCACA  
GGTGGGACCATGCTGGCTGGCATAAATTAACAGCCCCTCGGCGAGGGACGGCCTN

>'990809A-040.scf' came from CONTIG 35 at offset 0;"C:\export\EG\_DB\990809a\990809A-040.scf"(60>587)  
GCACGAGGGTGGGGTCCCCCTGGGGGTGGGGGGCGGGAGACATCTGGGCATCCAGCCCCCCCAGGTC  
CTCTTACTCTCTCTCTCCTTTCTCCATCCACAGGTGATAGTGAGGTGCGGAAGCTGGAGGTGGCGCTG  
GGCGTACATCTTCGAGATGCCAGGCGTGGGCAGAGGCTCCGCTCAGGGGCGCACGGGGTGGTTGCGG  
GACCTCCCAACGCCGGCAAAAGCAGCCTGGTGAACCTGCTCAGGGGTGGGGCGGGGGCGGGGCTAGG  
GGCAGGGGCGGGGCTGGAGCTAAGCTGCTGGGCTTGTGGGGTAGGGAGGGGCTGGGAGGGTGAAAA  
CTGGCCGGGCGGGGGGGGCTAGGGAGGGACCTCCATTCCACCACCGCTCCTCTGGCCACCCACC  
CCGGCCGGAGCTGGTCATCGGGCCCGAGCGGGACACCGGAGTCTGGACCGGGGACTGGCGATTACG  
CTGTGGGACATGGGGTGGGAGGGGGGCTGGGCGGGGGGCGGGGCCAAAGAGGAGCGA

>'990809A-036.scf' came from CONTIG 36 at offset 0;"C:\export\EG\_DB\990809a\990809A-036.scf"(55>584)  
CTCCCCCGAGCGCCGCTCTGGCCGCACTGCGCTCGCCCTGAGCTCCGGGCTCCTGCTAAGCCAGCGC  
CGCTGTGCGCTCCCTCCAGTCGCCATCATGATCATCTACCGGACCTCATTAGCCATGACGAGATGTTT  
TCCGACATCTACAAGATCCGGGGGGGGGCGGACGGGCTGTGTCTGGAGGTGGAGGGGAAGATGGGCA  
GAAGGACAGAGGGGAACATCGATGACTCGCTCATTGGTGGAAATGCCTCCGCTGAAGGCCCGGGGC  
GAAGGTGCCGAAAGCACAGAATCACTGGGTGCNGTGTGTCTTGAACCATCACTTGCAGGAAACCAGC  
TTACAAAAGAGCCTACACGAGTACTAAAAGATACATGAAGGAATCAATGGAAACTGTACACACAGAC  
AGAAGAGAAAACCTTTTGACGGGGCTGAGACAAATCAGCACATCTGCTATTTAAATATATTTTTTTG  
TGAAACATGATCAATGCGGGTGGTTGTGGCTACGGAGGTGGGNANCCATTTGATT

>'990809A-038.scf' came from CONTIG 37 at offset 0;"C:\export\EG\_DB\990809a\990809A-038.scf"(54>610)  
CAGCAACCGGCCTGCCTTCATGCCCTCCGAGGGCAAGATGGTGTGCGACATCAACAACGGCTGGCAGC  
ACCTGGAGCAGGCCGAGAAGGGCTACGAGGAGTGGCTGCTGAACGAGATCCGCCGGCTGGAGCGGCT  
CGACCACCTGGCAGAGAAGTTCCGGCAGAAGGCCTCCATCCACGAGGCCTGGACCGATGGGAAGGAG  
GCCATGCTGAAGCACCGGGACTATGAGACGGCCACCTGTGCGACATCAAGGCCCTCATCCGCAAGCA  
CGAAGCCTTCGAGAGCGACCTGGCCGCCACACAGGACCGCGTGGAGCAGATTGCCGCCATCGCCCCA  
GAGCTCAACGAGCTGGATTACTACGACTCCACACGTCAACACGCGCTGCCAGAAGATCTGTGACCAG  
TGGGACGCCCTGGCTCTCTTCCCACAGNCGCAGGGAGCCCCTGAGANAACGAGAGCAGCTGAGACAT  
CGACAGCTGCACTGGAGTCGCCAGCGGGCGCCCCTCACACTGGATGANNGCATGGAGACTCAGACA  
GTCATCGCCACATCAGN

>'990809A-042.scf' came from CONTIG 38 at offset 0;"C:\export\EG\_DB\990809a\990809A-042.scf"(54>549)  
CAAAATTCTGAAAGCTGAATTTGTTACATAGTCTCAGTGAGCTCTTAACAGAATAGTGATGTTATTTG  
GGGGGAAAAGCAAACCTGAAAGGATTTTTCATGAATACTTCTTAAGCTTAAATTATTTATTTGTCTATG  
TCCAGGCTTAGTTGTAGCATGCGGGATCATTCAATTGGTTGGTGTGCGTGGGCTTCTGTCTAGTTGTGGC  
ATGTGGGTTCAATAATTGTGGTGCACAGGCTTAGTTACCCAGGAGTTGTGGATCTTAGTTTCTGATCA  
GGGATTGAACCTGCGTGCCCTGCATTGAAGGTGGATTCTCGACTGCTGGACCACAGGGAGTCCCTAC  
TGAAATATTTTGTATTAAATAAAAGGGTTGGCTGGGTTCCCTCTGCAGGGCCCAGGCATCAATTACAA  
GACAGCGCGGGGNGGGGCTGGGGCGGCGGGGGGGCGGAGTGAGGACAGTTAGCTGGAGGAGTTTGG  
ATGGGGGGGGGGCGCGGA



>'990809A-039.scf' came from CONTIG 39 at offset 0;"C:\export\EG\_DB\990809a\990809A-039.scf"(53>591)  
 TTCTCCTCGGGCATCACGGGCTGCATCAAGAACCTGGTGCTGCACTCCGCCCCGGCCCGGGCCCGCC  
 CCCGCAGCCAGTAGACATGCAGCACCGTGCCAGGCAGGGGCCAACACACGCCCCCTGCCCCCTCGTAG  
 5 GCCCTGCCTGCCCCGCACGGACTCCTGGGCCGCACCCAGCCCCGCAACGGCGACTATATTATTATTA  
 ATATTATTATGATGATGATGATGAATATTTTGTAAAGAAACCGAGGCGATGCCACGCTTTGCTGCTACTG  
 CCCTGGGCTGGACTGGAGGGTGGGCACGTCACGCCCTCCCGCCCCCACCACAAACACACCTGGGCAG  
 AGCCACAGGCTGTGGGCACAGCAGGTTGCACCAGAGCCGTGCCTCGGGGGCCACCAGACACGGGTTA  
 GGCGCAGTGGCTCATGGGTCAGACCGCCCCACACAGACCCCCCAGCAGGCTGCCGNCGTGTGTCAGCTG  
 10 GGCGGGCCCTATTCTGGAGCGCATGCTCACCGCCCTGCAGCACTGAACCACAAACCGGAGAGGA

>'990809A-045.scf' came from CONTIG 40 at offset 0;"C:\export\EG\_DB\990809a\990809A-045.scf"(61>588)  
 GCACGAGGTGGAGAAGGGGGCAGACCTCAAGTGGGGGAGCCACCTGGGCTGAGGTGCCTGGGCCAAG  
 TTAGACCTTGGGCCTGAAGGCTTCTGGTGGGTAGCCGGCCCCCTCCCCACTGAAGCACCGAGCTCTAA  
 15 GAAGTCAAAACACGTGTTGACTCATTTGTTGGAGAAATTCAGCTCATGGGCTTCCTGCATTCCAGGGTGC  
 TGGTATGCCAGAAATTTCTCTGGAGGAGCAAGCAGGGAAGTCTTGTCTTAAAGTAAAAATGCTAATAAA  
 ACATCTCTAGAATCTGCTCCTTCTTTTACCCACACAGCCACTGACTAAATTACCTTTTGTCTCATTT  
 GCTGAATTGCCTTGGCTGCTTAATTGGCTTCNCTGTTTTTGGTTTTCTNCACACCCACTTCATCTGTCTC  
 CAATGGGTTGAGATGATATTAATAATGCANACTGCCACGTTCTGCCTTGGTTNCCCCACGCTGCAGATG  
 20 AGGCAGATGCTAGTGGGCCTCTGGACCTCAGAACTTGGGCTNATGAGG

>'990809A-053.scf' came from CONTIG 41 at offset 0;"C:\export\EG\_DB\990809a\990809A-053.scf"(55>485)  
 CAAAATTGACCTTAAACAAGGAAAGTTTGAAGTCACCATCTTTGACTTGGGAGGTGGAAAAAGAATTC  
 GAGGAATCTGGAAGAATTACTATGCTGAGTCCTATGGGGTAATATTTGTTGTGGATTCAAGTGATGAA  
 25 GAAAGAATGGAGGAAACAAAAGAGACAATGTCAGAAAGTGTGTGACACCCTCGGATATCCGGAAAGC  
 CTATATTGGTGTGGCAAATAAACAGGATAAGGGAGGGGGCTCTAGGAGAAGCTGATGTGATTGAGT  
 GGTGTTTTTCTGGAAGCTCGACATGAGCACACGTGCTGTGTTAGATAAACCCCTGTGTGCAGACTGGG  
 ATATGGAAAGAAAATGACATGTTCAATTAAGGGGCTTTTTTGGTTCTACTTTATTGCAGGGGCTTGTG  
 30 CCTTAAGAACGCTCCAAAAACACA

>'990809A-046.scf' came from CONTIG 42 at offset 0;"C:\export\EG\_DB\990809a\990809A-046.scf"(53>593)  
 TGAGACATTCCCATGTTTCGGAGGATTTACAGACAGGAGGATTCGCTCACCTCACATCTAGCAGGTTT  
 TTGTAAACGTGACCCTTGGCTGCATCTCCCATCTTCAGCACAGCTCAAGCACCCCAAACGTGTCTTTC  
 35 TCCCCCATAGACTGACAGGTGGGATCAGCTCCCCGGTAACCTTCTCTCCCTTCTCCATCTTCTCCACA  
 CCTGTCCATCCATAAAAAAGCAGATTTTGGGGGTCTTCCACGCCTTCTCCCTTTCTTTGTGTCTTTTTT  
 TTAAGTGATATTTTGTAAATACATGTGAAATACCAAGGATTAATGTCTGCCCCCTCTGCGACCTCTCT  
 CACCTCTTTTTCATAAAGCTGCTCTTTATGTTGCTTACATGCCTTATATATGTTTGTGAAGATATATATT  
 GAGAGTATTGTATATATATATATTTTTTGTGGACATCGATCCTTCTGAACTCTGCCAGCCGNTTCTCTC  
 40 TTCCTTCACATATCAGCAACGCGCCATACCCAGCCTNGAGCAANGGGGGAGAGNA

>'990809A-044.scf' came from CONTIG 43 at offset 0;"C:\export\EG\_DB\990809a\990809A-044.scf"(59>584)  
 GCACGAGGGGCATGTTGCGCGCCGTTGCGCTTGCCGCCGCCCGCCTCGGACCCCGCCAGGGCCGCGC  
 CTGCTGTCCGCGCCACCCAGGCCGCGCCGACCCCCAACAGCAGCCTGAAGTCTTGTACAACAGAT  
 45 CTTTATAAACAATGAGTGGCATGATGCCGACAGCAAGAAAACCTTCCCCACGGTCAATCCATCCACTG  
 GGGATGTCATCTGTCACGTGGCTGAAGGGGACAAGGCAGACGGGACAGAGCAGGGAAGGCTGCCCGG  
 GCCGCATTCCAGCTGGCTCGCCCTGCGCCGCATGGACGCGTGCGGGGGGGGCCGGCTGTGAACCGCCTG  
 GCTGTCTGATTGAGGAGACCGACCTACTTGCAGGCTGGAGACCCTGAAAGACAGCCCTTATATCTCTA  
 CCGTGATCTGACAGGCTCAGTGCTGCGTCTTGCCTGGCTGCAAACAGGAAACATCCATGACGGACAC  
 50 TCAGTCCCGCAGACGGGAGGGGGCGAAATCAGGACTCCGCCGCGCTGTAC

>'990809A-054.scf' came from CONTIG 44 at offset 0;"C:\export\EG\_DB\990809a\990809A-054.scf"(62>492)  
 GCACGAGGCTCACTTTGGTTTTTTAAATGACGTTATTTCTGAGGCTTGACGTCCCAAGCTAATCTGT  
 TTCTTCAAGGCCCTGGACCGCAAGGGCAATCTAGGCTATGGGGAGTGTTAGCTTGTGTTGCTGACTT  
 55 AAGACTTCAGCCCTTTCGCTGTACCTGTACCAAGTGCCAGGCCAACAGAGGGGGGGGGGAGGCAGC  
 TTCACGACGGGGCTAGGGGAGTCTGGAAGGAAGAAGCTGCACGCGGGGAGGCTGGGCCTGGGGAAAT  
 GAGCATCTTGGACTCATAAGGCCTGTTCTTCTTTGTTTCTTGGTCTGGTCCACAGGCACCAATTTTTCTTT

TTTTTGTGTTGCTTCTTTGGTTTTGCTTCTGGAGCCCATGTTGTGGCTGAGGCAGACCGCGGAACCCACA  
AAGAGGGGTGGGCCCTGCC

>'990809A-051.scf' came from CONTIG 45 at offset 0;"C:\export\EG\_DB\990809a\990809A-051.scf"(56>551)  
CTCAGATCGCAGCGGAAGAGTCGTGCTTTTCTAACGTTTCTTAGCTTCCAAATCCCGACATACAGAGGC  
TGGTAAAAGCAGAGCAGATCTGGTCAGGTCCTGAGACCGCTGAGTCCAGAGCAATGTTGCTGAAGAC  
AGTGCTCTTGCTGGCCTTGGCGTCCCAGGTGCTAGTCCTGGAGAACGGGCTCCTGCGGAAGCCACCCA  
TGGGCTGGCTGGCCTGGGGAACGCTTCCGCTGCAACATCGACTGCAGTGAGGGACCCGAAGAAGTGC  
ATCAGTGAGCAGCTCTTATGGAGATGGCTGACCGGCTGGCGCAGGATGGATGGGGGGACCTGGCTAC  
GTATACCTTAACATCGTGACTGCTGATTGTGGGCGTGATGCCAAGGCACCCGGTGCGGGACGCAGCGC  
TTCCACGCATGCCTTCTGCTGCTTGCTACTCCTGGCCGAGCTGGCTTTACAGACTGGNCACTCACTGC  
TGGGTACCGGCCCGCTGACA

>'990809A-034.scf' came from CONTIG 46 at offset 0;"C:\export\EG\_DB\990809a\990809A-034.scf"(60>595)  
GCACGAGGCACTGGCTGGGAAGCACGGGGGATGACCTTCGTGCGACGAAGACGGAGATTTCTGAGAT  
GAACCGGAACATCAACCGTTTTGCAGGGCTGAGATCGAGGGTGCTTAAAGGCCAGAGGGCTTGCTG  
GAGGCTGCCATCGCTGACGCTGAGCAGCGTGGGGAGATGGCTGTAAAGGATGCTCAAGCCAAGCTGG  
CCGGGCTGGAGGCCGCTCTGAGGAACGCCAAGCAGGACATGGCGCGGCAGCTGCGCGAGTACCAAGA  
GCTCATGAATGTCAAGCTGGCCCTGGACGGTGGAGATTGCCACCTACAGGAAGCTGCTGGGGGGCGA  
GGAGAGCCGGCTGGGTCTGGATGCAGAACATGTATATCCACACCAAGACACCGTGGCTTCGCAGTGCC  
TGACTTCGCCCCACGGACCCTGCTCACTACACCCGGCCCGCTCCTTACCCACCACTCCACCGGGGTGTGA  
AAGAGGGACCCGAGGGAGCGGGCCGGCCCTGTGTCCGCCAAGGAGGCCCGGCGCTCCCCCCCC

>'990809A-052.scf' came from CONTIG 47 at offset 0;"C:\export\EG\_DB\990809a\990809A-052.scf"(62>521)  
GGACGAGGGCCAACCGGGTTCGAGAAAGATCTCAAGATGGCTGGACGGGAACCTTGCTCTAAAAACCA  
TTGGACTGGGGTAGCTTTTGGGGGGGATCATCCCTCGGAACAGAAAGCGGGCTAACTCCTTGAAGTC  
CTGGAATGAGACCCTAACCTCCAGGTTGGCTACTCTGCCTGAGAAGCCACCTGCCATCGACTGGGCTT  
TCTACAGGCCAACGTGGCAAAGGCTGCTTGGTGGATGACTTGAGAAGAAGTTTATGCCTCGAGGTGTC  
TTACCAGAGATAAATTACTGCCAGGTGGTGTGAAGAAAGAAGATGTGAAAGTGTGTGGGTTTGTCTC  
ATCAAAACAGATTATGATTGATAGAGTGTGGAAAGAGGAATATTTCTGTCAATGACTTGGGATGAGA  
AGATTACACCAATAACAAGAGACCCCTGCTCCAGCATGGACTTTGTGGTGCG

>'990809A-050.scf' came from CONTIG 48 at offset 0;"C:\export\EG\_DB\990809a\990809A-050.scf"(60>423)  
GCACGAGGGGGATATGTGCCAGGTCTGCCCTACCTGTCCCAAGAGCACCAGCAGCAGGTCTTGGA  
GCCATTGAGAGGGGCTAAGCAGGTCACTGCTCCTGAGCTGAACTCCATCATCCGACAGCAGCTCCAAG  
CCCACCAGCTGTCTCAGCTGCAGGCTCTGGCCCTGCCCTGACCCCCCTGCCTGTGGGGCTGCAGCCCC  
CTTCTCTGCCGGCGGTACGCGCAGGTACCGGCCCTCCTCTCGCTGTGCGCGCTGGGCTCCAGGCCACC  
TCTCCATGAAGACAAAAACGGGCATGATGGTGACACCCACCAGGAGGACGACGGCGAGAAGTCGATT  
ATGGGCGGTGGTGGGNGGGGNN

>'990809A-015.scf' came from CONTIG 49 at offset 0;"C:\export\EG\_DB\990809a\990809A-015.scf"(61>564)  
GCACGAGGCTCCGGTGTCCCCGCGCCAGAGACGCAGCAGCGCTCCCTCTGCCCACACCCACCGCGCCC  
TCGCGCTCGCCTCTCCTTCCGGAGCCAGTCCGTGCTACCGCAGTCGCCCAGTCCACCACCACCTCTGC  
AGCCATGTCCACCAGGTCCGTGTCTCCTCGTCCCTACCGCAGGATGTTTCGGGGGGCCCCGGGACCGCAA  
GTCCGGCCGAGCTCCACCCGGAGCTACGTGACCACATCCACCCGCACCTACAGCCTGGGCAGCGCGCTG  
CGCCCCACCACCAGCCGCACCTCTACACCTCGGGCCCGGGTGGGCGTGACGCCACGCGCTCCTCGG  
CCGTGCGCCTGCGGAGCGGCGGGGCGGCGTGCGGGTGCTGCAGACTCGGTGGACTTCTGNTGGCCGA  
CGCCTCAACACCGGTTCAAGACACCGCACACGAGAGTGAGCTGCAGAGCCATGACGCTCGCCACT  
ACATGACAGGCGCTTCTGGACAGAAACA

>'990809A-096.scf' came from CONTIG 50 at offset 0;"C:\export\EG\_DB\990809a\990809A-096.scf"(60>437)  
TGGTACGGGGATAGCGTCTGCGCTATGGCATATACGTATCAACCAGCACGGGGAGGACACCTTCAAC  
CGGGCCAAGCTGCTCAACGTGGGTTTCTAGAGGCACTCAAGGAGGACTCCACCTACAAGTCTCAT  
CTTCAGTGACGTGGACCTGGTCCCCATGGGATGACCGCAACCTGTACCGCTGNGGTGGCCAGCCCCGC  
CACTTTGCCATTGCCATGGGCAAATTTGGCTTCCGGCTGCCCTATGCTGGCTACTTCGAGGGGTGTCGG

GCCTGAATAATCCCAGNTCCTGGGAATCATGGCTTGCCAAACGAGTCTGNNGTGGGTGGTGAGATGATG  
ACTCTTACCCGGTCTCCTGCTTGATGAAGATCTGGGT

>'990809A-055.scf' came from CONTIG 51 at offset 0;"C:\export\EG\_DB\990809a\990809A-055.scf"(60>587)

GCACGAGGGTGTAATCTTGTGATATCACCTCTGTAAGCCTGGATCTCCCCAGGTGTCAAAGGAGGCAG  
TTGAATAAGAGGAACTATGAACTCTTCTATCTGTGTTATATAGACGGCCCATTTCAATCTAGAGCAGG  
GGAATGCCATCCCAAGAGGGCACTTTTACAGAGGAGGGGGGTTTGTCAACATCTTTGGTTGACATTAC  
TCTGGTGTAGGGAGGGACGAGAGAAGGCAATGGCACCCCACTCCGGCACTCTTGCCTGGAATAATCCCAT  
GGATGGAGGAGCCTGTAGGCTGCAGNCCATGGGGGCTCGAGAGTCAGACACGACTGAGCGACTCACT  
TTCATTTTCACTTCCTGCATTAAGAAGAAAGGCACCCACTCCAGGTCTGCCGGGAATCCCAGATGGGG  
AGCCGTGCTGTGCTTGGGGACACAAGCGACACAGAGGACTAGCGCGCGCAGGGGGAGCCGNGTTGA  
TAGATGCTCAACCTCACGGGACCTGCGGTGTACATAGATATACTATATTTGCGA

>'990809A-064.scf' came from CONTIG 52 at offset 0;"C:\export\EG\_DB\990809a\990809A-064.scf"(59>611)

GCACGAGGAATTTATCAAAAATCCCAATAACTCAACACAGAATTTGCACCCTAACCAAATATTACAAA  
CACCCTAGCTAACATAACACGCCCATAACAGACCACAGAATGAATTACCTACGCAAGGGGTAATGT  
ACATAACATTAATGTAATAAAGACATAATATGTATATAGTACATTAAATTATATGCCCCATGCATATA  
AGCAAGTACATGACCTCTATAGCAGTACATAATACATATAATTATTGACTGTACATAGTACATTATGTC  
AAATTCATTCTTGATAGTATATCTATTATATATTCCTTACCATTAGATCACGAGCTTAATTACCATGCCG  
CGTGAAACCAGCAACCCGCTAGCAGGGATCCCTCTGTGCTCGGGCCCTAAACCNNGGGGGTCTGCTTCT  
ATGAATTNTCCAGGCTCTGTTCTTTCTCAGGCCATCTATTAACGTCCTTCTTNTCTCTAATAGAATCTGA  
TGACTATGCTATAGCCAGCTACCATACGGCTGCNTCTTGTTTTTTATTTGTGAGCTGACTAGTTGCCGN  
AAN

>'990809A-094.scf' came from CONTIG 53 at offset 0;"C:\export\EG\_DB\990809a\990809A-094.scf"(54>456)

CGCACCGTCAGGCTGTACTGCAGGGCCGCGGGGTGCCAGTGCCACCATCACCTGGAGGAAGGAAG  
GGGGCAGCTCCCCCACAGGGCCGTCAGAGCGCAGACATTGCCACCCTGCTCATCCCCGCCATC  
ACGGCCGCCGACGCCGGCTTTTACCTCTGTGTGGCCACCAGCCCTGCGGGCACCAGCCAGGCCCGGAT  
TCAAGTGCTGCTCCTTCCAGGTGCCACCACCCACCGGTCAGGATTGAGTCTCCTCGCCTTTTGTGAC  
CGAAGGACAGACCCTGNACCTCAACTGCGGGGTGTGAGGGCTGGCCACAGCCAGATCACGTGGTGC  
AGCGAGGGGGCAGCCTGCCTCCCACGCCCAGTGCGCGGCTCCCGCTGCGGCGCCCCAGTATTAC

>'990809A-058.scf' came from CONTIG 54 at offset 0;"C:\export\EG\_DB\990809a\990809A-058.scf"(56>578)

CTTCGTCCTCTGGGGTGGAACCGGAAAATTCTCAGGATAGCGTGTACCTCCAGTACTGTAAAGTCT  
GCCAAGCATAACAAGGCACCACGGCCACATCACTGCAGAAAGTGTAACAGATGTGTGATGAAGATGGA  
CCATCACTGCCCTTGGATCAACAAGTCTGCGGCTATCAGAATCATGCTTCCTTACGCTGTTCTCCT  
TTTAGCACCCTGGGCTGCATTACGCTGCCTTTATTTTTGTTATGACCATGTATACGCAGCTTTATAAT  
CGGCTCTCCTTTGGTGGAACACGGNCAAGATTGATATGAGTGCAGGCCGAGAGACCCCTCCGTTAT  
TCTTTTGATTAGCTGCTTTGCGCCACCTGTTTGCCTGGGTAGCTTAGAACACCTACGTCGGTGTGNTTT  
TATCAGAGAAATATCTAAACAACCTCATGATATGATGAGAGAGTAGATGATTATATATATAATGATTT  
GTTTCTTGTTGGAGGATGAACTCACAGATAATGCGGTGAGGN

>'990809A-059.scf' came from CONTIG 55 at offset 0;"C:\export\EG\_DB\990809a\990809A-059.scf"(56>604)

CTTTCTGAAGAGCCAGGAATTCCTTCAGGCTCGCACCCCGACCTCAGCCAGCACCCCATCCACCCA  
CCCCCAGGCTCCCTGCCCTGCTGTAGATGCCGAGATCAGAGCCAGGATGCCCCGTGTCTCTGCCCC  
AAGCACGAGTTGGGAGGCAACAGGTGCCAGAAGTCATGTGGGCTGAAGCCAAGGTGGCCATCCCCGC  
CAGCGTCTGCCAGGACCAGAGGAGCCTGGGGGCCAGCAACAAGAGCCAGACCAAGCCAGACCCCT  
GAAGATCATGCCTCCCTGCTCCAGCCCTCACCCTGACCACTCCAGTCTAGAGACCAAAGATGGAGAAC  
CCAGGCATCTAGAGAGACCAGCAGATCCCAGGAGGAGATGAAGCCACTGTGGGGCTGACAGAAAGAA  
ACAAGGTAGAGCCAAGCAGGAGCAGCTGCAGAGAAACGGCAGAGAGCGTCTGGACGGAAAATTCAG  
ATGCCAGCCTTGAAAAGAGCTTGACCTTGATAAAATCAAGCATGNTCCTGGAACAACCTGAACTTAA  
CCTAAAGGG

>'990809A-084.scf' came from CONTIG 56 at offset 0;"C:\export\EG\_DB\990809a\990809A-084.scf"(56>504)

CTTCGGCACGAGGCCCCCTTCTAGGTCGGGGGGGACTTTTGTCTACCCCTCCCTCACCCCTCGAGGACC  
CTAGTGGCCTCTGATGCCAGGGGTGCAGTGCCTGCCAGTGAAGGAAAGTAGAAGAAAGAGGCAAGG

CCCGCTCCCGGCTCAATGTTTGACCTTCCCAGGCCCCATTCCCCCCTTTATGTAACTGTCTTCTTATATA  
AATGGTGATCTTTTTCTCTTCATCCACCATGTGATGTTGGGTCAAGAAACTGGGCTGGATGGGATGAGCA  
CCCATTGGTCCGTCCTGTGCATCTTTTCTTGCTTATTACGTGGTGTGGGCTGTCAGCCAGATTATATTCC  
CCAACCCATTTTGCTTCTCTCTTCCCAGGTGCCTTGGTGTTTGTTTATTCCGGGGTCCAGTTCCTAT  
TTTGGGGGTTCTTGGTGGGGGTCTTTCTTCTCA

>990809A-063.scf' came from CONTIG 57 at offset 0;"C:\export\EG\_DB\990809a\990809A-063.scf"(62>547)  
GCACGAGGGTGGGTAAAGCATGAATCCTTTTACACAGTCATTAATATTGTCTTTTAGGGTTTATGTAGT  
ATTCTATAGTTTTGTGGAATGAACATAAGAAAAATAAGTAGTACTTCATAGATCCTGCTGCATGCCA  
GACCTATTCCAAGTATTTTACATATATTGATTTATTTAATTATCAGAATGATCTTATGTAGGAACTACT  
GCTTCTATATCAATCCAGCAGTCCCTGATTTCCACACTGTAGATGAGGGAGGATAGCTCACAGGCAGC  
AAATGAAGCAACAATGTGCTTCACAGCANACTGTTAGCAGATTCTTAAGGCAAAAAAATGGCGATG  
GTTGTCTCATTATCAGGAACCTAAGCACGCTGATGTCCCCGCGTCCCCCTCTCTCCACTGGGGAGACGCC  
ACACCCTTCTTATGTTTCCCTTGAGCATAACATCTACCTTAACACCCCCCGCATTATCAGCAAAAGAA  
ACACAA>'990809A-060.scf' came from CONTIG 58 at offset 0;"C:\export\EG\_DB\990809a\990809A-  
060.scf"(58>515)

GGGCACGATGCTCACTTTGATTTTTTATATGACGTTCTTTCTGATGTTTAACACCCACAAAAATATTTT  
ATGATTTACGTCCCTGTGCACCCAAGGGCCGTCGATGCTATGAAGAGCGATGGGTGCTGGGGGGCCT  
TAAAACTGAAAAGCTTTCGGTTGCCCTGTGCCAATCACAGGACAAAAGAGGTGGGGGGGAAGCAG  
CTAGACAACTACGTCTAGGGGAGCGAGCTGGAACAAGGGCACACACGGACGCCGCGCCTGCCTGAAT  
GAGGGACAGGGACTCCGACGACCTGTGTTCTTGTGATTCTGGACGTGACACAGGCACTCTGCCCTGCG  
CCTTTCTGTACGCTCTCTTGCTTCGCTGCGGGCGGCCCTTGAGGCGGACTGAGGATGAGCGCGCAACG  
CCACACGAGGCCGCGGGCCCCCTGCCACGCGCGGCGCGAGAGGAAGTGCCC

>990809A-091.scf' came from CONTIG 59 at offset 0; "C:\export\EG\_DB\990809a\990809A-091.scf" (56>557)  
CGGACTGGGAGGTGAACCTCACCGACTCCTTCTGGAACTGGGAGAAGGGCTTGGTTCTTGAAACTCCT  
CAGGTCGGACTTTTTTTTTTTTTTTTAAACTGGGGGCTATGCTGCCCTTTCAATAAGGTTTTTCAATCGTT  
GGTGTTCGCTTCCAACCTTAAGAGAAATCCAGGCACTCCCTTCCCCCTCCAGTGACATACTTGGGCA  
AGCGGTCATCGTTGCGTCATGGGGCAGACGGGGGGAGCTTCCTGCTGCCGNGCGGGGGTGGGGGCCG  
GGAGGAGGACCTGGGTGTGGGCCGCCCTGGGGAATGGAGGNGGGCGGCCTGAGCACTGCGCCTGCTG  
CGGTTATTGCCCGAGCCCCTCGCCTCGGGGTAGAGGNCCGACTATTTCTTTAAAAATTTTTTCTGTGGGC  
GTTGAGTGGGATGTACGTCCAGCTGCCTCAACCCACAACACACCGACGTCTGCCGATACAAATGAGG  
AGCAGAGCGACTGATCGGCTGCGA

>990809A-088.scf came from CONTIG 60 at offset 0;"C:\export\EG\_DB\990809a\990809A-088.scf"(56>586)  
CTTGATTTGAGTCTGTTTCTAATCCCTGTGTCTTTGCTCTCCAGGGCATGTGTTCTTTTCATATTTGTTG  
GCACCCGAGAAAACATCAGCAATGCTCAGGCTCTGCTGGAATATCACCTCTCCTACCTGCAGGAGGTG  
GAGCAGCTCCGCTTGGAGAGGCTGCAGATTGATGAGCAGCTTCGGCAGATTGGGCTGGGCTTTCGGCC  
TCCTGGAAGGGGGCGGGGCAGCGGCAGCAGGGACAAGGCTGGATAATACCACTGATGAGAGCTCCTCC  
TCTTCCCTTCATAACACACGAACCTATGGGGGCAGGTATGGGGGCCGGGCCGGGGCCGGAGGACAGG  
CGGTCCTGCCTATGCTGTGAGACGNATCAGAGAAGAGGGAGAGCCCCCGGCTGGCCCGGCGACGG  
GATCCCCGCCCCGGGGAGAAAGCCGAGCGNCTATAGAGGCGGGTAGGGACCCCACTGCCCCGNCCACT  
AGATCACTCTTATGATATGTAGCTGAGACAACGAATCTTCAACACGGGCATCACA

>'990809A-078.scf' came from CONTIG 61 at offset 0;"C:\export\EG\_DB\990809a\990809A-078.scf"(55>588)  
GTTTTTTTTTTTTTTTTTGGATGGAATGTAAATCTTTTATTAAACAGTTGTCTTTCCACAGTAGTAAAGCT  
TTGGCACATACAGTATAAAAAATAATCACCAACCATAATTAGACCAGATTCCCTCTTATCAACTGCATA  
CTAAGTATCTTCAGTACAATTTTTTTTCCATATAAAAAATACTGGGAAAAAATTGATAAAATAACAGGTAA  
GAAAAAGATATTTCTAGGCAATTACTAGAATCATTTGGGAAAAGTGAGTACTGGGGCTGTTCTGAATAC  
CACAGTACAAAGGACATGCTGTTCCATACAATATTGCGGGCCAGTCAGTTAAGTGGAAGCAGAAGTGTT  
CAGGTAACCTTTCCTACTTAAAAATTTGGTAATATCATTTCAAGACATTTTGTATCTTGGTTGGGTGCATGT  
GCTCCCTAGGATCCCATCCAAATCACAGTAGATCACTCATTTAAATCTGATGCATGGATATTTGAGAAT  
GATACCTCTGCTCATGATGAGAAAGCTGAACACTCAGGGAGCTGGAGAGCGT

```
>'990809A-032.scf' came from CONTIG 62 at offset 0;"C:\export\EG_DB\990809a\990809A-032.scf"(53>590)
```

TGGTTTTCTTAGGCACGGGGGGAGCTGAGTAGGTGTGGGGATGGGACAGGGAAGGGCAAAGGACAGA  
GCGGGGGGACCTTTGCCTCTCCAGGTGCCCCACGGCCAGCCCCCGCGTCCTTCTGCACTGCTCCAC  
ACCCACACCCCCAGGGCCCTGAGGGAAAAGACAGGCCCGAGGCCCCAGGCTGGAGAGAATAGCCCCG  
AGGCATGATGCCGCACTCCTGGCCCCGAGACTTCCCTTTCATCCCTCCCACTCCCCACAGACCCCTTT  
5 TGACTCTCATCCTGAAGCCTAGAAAAGAGAGAGAAGCGGGGNGGGGTGGGTCTGTGGGGNGACGGGGCG  
GAGGAGGCGGGGAGCAGGGAAGGCGGGAGCCCTCTGTGCTGGTTTTTACCAGATACACAGCAGCTT  
CCAATATATTATTCACCCCTGAAAAAAAAAAAAAAAAAATGAGGGGGCGGGGACCATCGNCTATGGAGNGA  
TACATCATGNCGCGTTTACAGGGATGGAAGTGCCTACACTATGCTGACCATCCCTTGCGGGGGT

10 >'990809A-090.scf' came from CONTIG 63 at offset 0;"C:\export\EG\_DB\990809a\990809A-090.scf"(60>584)  
GCACGAGGCTCGGGAGGTCAGAAAGCCGGGCGCGGGCGGACCGAGAACTGGAGCTGGGATCGGG  
GACGCACAGAGGTCAGGGGAAGTAATCCTGGACCATGACTCAGCAGCCACTTCGAGGTGTGACCACT  
CTGCGTTTTCAACCAAGACCAGAGCTGCTTTTGTGTGCTATGGAGACAGGTGTGCGCATCTACAACGT  
GGAGCCATTGATGGAGAAGGGGCATCTGGACCATGAGCAGGGGGGCGAGCATGGGCCTGGTGGAATG  
15 CTGCACCGCTCCAACCTGCTGGCCCTGTGGGCGGGGGTAGCAGCCCCAAGTTCTCAGAGATCTCAGGG  
CTGTCTGGGACGATGCCCCGGGGGGGCGAGGACTCCAAGACAGCTGTGCTGGAGTTCACTTACAAGCCG  
GCGGCTGGCGCTGCGCATGACAATCGGATCGGCTGAGAACGCTTATGGTTCTCTCCTGACATCCGAAG  
CTGTGATTGCACCGGACACCCAGGGCTTGACTTGCTCACTGAAACAGTGTGG

20 >'990809A-087.scf' came from CONTIG 64 at offset 0;"C:\export\EG\_DB\990809a\990809A-087.scf"(61>433)  
GCACGAGGCGAACGAGCAGTACCGGGCGCTGCGCCCCGACCTGGCGGTAGGGGGAGGGTGGATAGGA  
GGGGTGCGGCGGCGGGGGGAGCGGGGGAACCCGACCCACAGGACATCCGAGGACGGGGGGCCT  
CTCCCTGGGTCACTACTGTCTTTGCTCCATGTCCAGACATCTTCTGTAAATGAACAAAGCTCTC  
25 ACTTCAAAATCCACACTTCATTTGGGACTAGACAGTCGGGGGTTGGGGTTGTTTCCTTACTGCTAAACA  
AAATCCTCCACCCGGGACTCTGATTTGGGGACCAAAAGCCCCCAGAACCTCACCTGTGAGCCTCGCT  
GTGTGGTGCGGGGAGGGTGGGTGGGGGNNNGG

>'990809A-067.scf' came from CONTIG 65 at offset 0;"C:\export\EG\_DB\990809a\990809A-067.scf"(59>555)  
GCACGAGGCTGCAGATTCTTCTATACTATTTATAGGTAGTCCTGACTCCACTACCCGCTTCCCAA  
30 TGGGCTGTTACGCGGAAGAGGCTCACGTTTACACAGCAGAACCCGAGAGAATGGTGTGAACTGTGC  
GGGGGGAGTGATGCAGGAGGCAGACTGAGTGCCCTGCTGTGCTCACCTGTGCTTATCACTCTTCTAG  
CATCGCGTCCACGCTGGTCTCCCTCGGGAACCACTGTGTGCAGAGGCCCTCTGTGGCTGGATGTCTAG  
CTTGCTCCGCCAGGCACAGCGNGCTTTGGGGGCCGAGGGGGCGGCGCTGTGCTGGGCTACCCCGC  
GCGGNNACAGCTCCCTCTTGGCCNACAGGGTGTCCGCTCTCCCTCTCTGGCTTCGCTGTCCCATGTT  
35 AGTCACANGAGAGCCTGGCTCCCCTGCCCTTATTTGNATGAAATGGCTAGATCTGCCTTACTCTTACTG  
ATGATGAATTGATATGC

>'990809A-068.scf' came from CONTIG 66 at offset 0;"C:\export\EG\_DB\990809a\990809A-068.scf"(56>612)  
GTTGAGTCTAGGAACCGTCCCAGCATGGCTCCCCTCCACCGCCACCACCACCATGTCCCACCCCT  
40 GCGATGGCAGGTGATCTAGCTCAGGGGGGCTCCCAGGCTGAGCAGGAAAGGAAGTTTCCAGAAAAC  
CTGGGCTGGGGGAGGAGTCTGGGGACAGCAGATGCCTGCCGACAGGGGCTGGCTGCCTGTGGACCC  
TTCCAGCTCAGTGAGGCCACGTTAGGGGCCCTCAAGCAACCCAGAAGCACAATTTGGTGGTTTGGG  
GCCACGCCAGCTGGGCTGGCATCCACGAACCTGGAGAGTTGGCTATGGCAGCACCAGGGCCTCGGCC  
CCACTCCCCTCCCAGGGTCCCCGTCCTTTCCCCCGCAGGCTCTGCTCAGGCCAGCCCCTGAGCCGNCA  
45 GCGGGCCCCCTTACCGGGGCTGGTCTTGAGCACACCCTGTCCACTCACCACCTCTNNTTCTCGCCAC  
CCTTCCCCGCACCATCGCCCTATATCGGGTTGCTCTCAGGCCCACTGAGTCACTTCTANNTTGTCTGG  
CCTGCGCGCGT

>'990809A-069.scf' came from CONTIG 67 at offset 0;"C:\export\EG\_DB\990809a\990809A-069.scf"(60>613)  
GCACGAGGGGAAGCCCATGTTTTATGTGTGCACACACACAAAATGTACACACACTCATGGTCTGCCA  
50 GTCTAGCAGTGGGAAAATGAAGATGAGGCAGGGTCTGAATGTCCACTTGCTCTCACTGACTGCCACGG  
AGCATGGTATGTGAAGTGGGGTCTTATCTGGAGAACTGTCCATCAGGGCTGTAGTCTGGCTACAGTC  
CACCAGGGCTGTAACATGCATTATCCATTTACAGTCAGCGAAACCATCGATAGAAAAGCCACAACAAC  
AAGGGAGCTGCAGGAAAAGAATCATGTAAGCCCTCCTGGGTCTTCATGGCTTTAGGAAATAGGGAA  
55 AGGCACCTAAAATGAGCAGGAAGGGCAACTAGAGTGGGGTTGGAGGTGGGGCAACCACATTTCAAGG  
GCTGCCAGTCTCAACGAAGCTGCCCAAAGCGACACCTATGGTGTGGTGTGTGCCCCAAGGGCCAGCAA

GAGGAGTCTACATTTAAAGCTTACGTGACTCTTGTGCCATGCTAAACCACCTCAAGCAGGGGGGCCAA  
CCCGGCGCGCCN

>'990809A-075.scf' came from CONTIG 68 at offset 0;"C:\export\EG\_DB\990809a\990809A-075.scf"(60>563)

GCACGAGGGTGAAATTCAGAAGAAGGCGAGAGGGCAAACTGACTACTATGCTCGGAAACGATTGGT  
AATCCAAGATAAAAATAAGTACAACACACCTAAATACAGAATGATTGTTTCGTGTAAACGAACAGAGAT  
ATCATTGTGTCAGATTGCTTATGCCCCGTATAGAAGGAGATATGATAGTTTGTGCAGCTTATGCTCACGAA  
CTCCCAAATATGGTGTGAAGGTTGGCCTGACAAATTATGCTGCGGCATATTGTGCTGGCCTGCTGCTG  
GCCCGCAGGCTTCTTAATAGGTTTGGTATGGACAAAATTTATGAAGGGCAGTCGAGGTGACTGGAGAT  
GAATACATGGGGAAGCTCGATGTACCTGTGCCTCACCTGTACCGGTGCGGACTGCCGCACACTACGG  
GATAAGTTTTGGGCCTAAGGAGCGCGNGGAGCTGCTTCTCCAGACCACGGTCTGNTTGATTAGAGCA  
AGATCAGGCTGGACACGAGCCAATGCCA

>'990809A-074.scf' came from CONTIG 69 at offset 0;"C:\export\EG\_DB\990809a\990809A-074.scf"(62>380)

GCACGAGGAAACAGGTTAGTTTTACCCTACTGATGATGTGTTGTTGCCATGGTAATCCTGCTCAGTACG  
AGAGGAACCGCAGTTCAGACATTTGGTGTATGTGCTTGGCTGAGGAGCCAATGGGGCGAAGCTACCAT  
CTGTGGGATTATGACTGAACGCCTCTAAGTCAGAAATCCCGCCAGGCGGAACGATACGGCAGCGCCCG  
GGGAGCCTCGGTTGGCCTCGGATAGCCGGCCCCCGCCGCCCGCGGGCGGGCCGTGCCCCGCGTCC  
CCCGGGGCGCGGCGCGGCGCGCCCCGCTGCGCGTCCGGACCGGGG

>'990809A-086.scf' came from CONTIG 70 at offset 0;"C:\export\EG\_DB\990809a\990809A-086.scf"(62>593)

GCACGAGGCTAAGACCCGTGTGCAGCAGCGGCGGGCGGGGGTAGAGGCGGGGGCGGGGGCGGCGGC  
AGCGGCAGCGGCAGCGGGGCTCGGGAGGCAGCGGTTGGGCTCGCGGCGAGCGGACGGGGTCGAGTCA  
GTGCGTTCGCGCGAGTTGGAATCGTAGCCTCTTAAATGGCAGATGATTTGGACTTCGAGACAGGAGA  
TGCAGGGGCCTCAGCCACCTTCCCGATGCAGTGCTCAGCATTACGTAAGAATGGCTTCGTGGTGTCTCA  
AAGGCCGGCCATGTAAGAATGTGGAGATGTCAACTTCTAAGACCGGCAGCACGGGCATGCCAAGTCC  
ATCTGGTTGTATTGACATTTGATGGAAGAAATACCAGATTCTGCCATCACTCATATAGGATCCCCACA  
TAAAGAACGATTCACTGTTGCATCAGATGATACCTTCACTCCCAAGAAGGGAGTGCGGAGACTCCGCGC  
CGAGAGACCTGCAGAAAGACAAAACACGGGAGAAAATTGTCAGGCGCCCCTGACAGGCG

>'990809A-072.scf' came from CONTIG 71 at offset 0;"C:\export\EG\_DB\990809a\990809A-072.scf"(293>632)

CAAATTGTAAGCGTTAATATTTTGTAAATTCGCGTTAAATTTTTGCTAAATCAGCTCATTTTTTAACC  
AATAGGCCGAAATCGGCAAAATCCCTTATAAATCAAAAGAATAGACCGTGATAGGGTTGAGTGTTGTT  
CCAGTTTGCAACAAGAGTCCACTATTAAAGAACGTGGACTCCAACGTCAAAGGCGAAAAACCGCTTCA  
GGCGATGCCCCATACGGAACCATAACCTATAAGTTTTTGTGTCGAGTGCCGTAGCACTAATCGAACCT  
AAGAAGCCCGTTTAAGCTTACGGGAAGCGGGAAGTGAGTAAGAGGAAAAGGAAGGGGGGCCCTGC

>'990809A-073.scf' came from CONTIG 72 at offset 0;"C:\export\EG\_DB\990809a\990809A-073.scf"(60>570)

GCACGAGGAGAAGGGGGACGTGGTGCTGCAGAGTGACCACGTGATCGAGACCCTGACCAAGACAGCC  
CTCAGCGCTGACCGAGTGAACAACATCAACATCAACCAGGGCAGCATCACGTTTCGAGGGGGGCCCCG  
GCAGGGATGGCATCATTGACTTCACACCCGGCTCGGAGCTGCTCATCACCAGGCCAAGAACGGGCAC  
CTGGCTGTGGTGGCCCCGCGGCTGAACCTCGCGGGGATGAAGGCGCCCAGCGGACCCCTCCCGCCTCCC  
AGTGCTTCGCTCATCCCCCTCCTNCCTTCCAGCTACCAAGAGACTCGAGCTTGCAGACAGGGACCCAGG  
GACACCTCNGAGCCCAACGACAAACTCCCGCTNCTGCTCGGCCCTCTCTGNNGGGGCGGGAGGGGCG  
CAGGAGCTGCCCAGNAGTGGGCAGCCGGGCCACACATAGGAGAGCCGGGCAGAGCAGCGCGCAGCC  
CCTGNCATGCAATATTGAGAGAGGACTTTGTGAGTTTTN

>'990809A-016.scf' came from CONTIG 73 at offset 0;"C:\export\EG\_DB\990809a\990809A-016.scf"(51>603)

TATGGAATGATGCTGGCAGGCCTAAGGTTCAAGTAGAATACAAGGGAGAGACAAAGAGTTTTTACCC  
AGAGGAGGTGTCATCCATGGTCCTGACAAAGATGAAGGAAATCGCAGAAGCCTACCTTGGAAGACG  
GTTACCAACGCTGTCGTACAGTACCTGCCTATTTAATGACTCTCAGCGTCAGGCTACCAAAGATGCT  
GGAACATTGCTGGTCTCAACGTAATTCGAATCATCAATGAGCCAAGTCTGCTGCTATTGCCATGGC  
TTAGACAAAAAGGTGGAGCAGAAAGGAACGTGCTGATCTTTGTTTTAGGGGTGGCACTTTTGATGTG  
TTAATCCTCACTATTGGGATGGATCTTTGAGTCAATCTACACTGGAGTACTCCTTGGGTGGGAGACTTG  
ACACCGCTGTTTACCATTTTTGCGAGTCAGCGGACACAGAAGATTAGGAAACAGAGGTGGCGCGCTCG

TCGGTGGGGGGCTAGCGCCTTTTCGCCCCAGCAGTTGGATGTTCCCTTTGAGGATGCTTTACTTTTCCG  
GCCCTTC

>'990809A-014.scf' came from CONTIG 74 at offset 0;"C:\export\EG\_DB\990809a\990809A-014.scf"(61>603)

GCACGAGGCAACGTCATCCGCTATTTCCCCACGCAAGCGCTCAACTTCGCTTTCAAAGACAAGTACAA  
GCAGATCTTCTGGGGGGCGTGGACAAGCGCACGCAGGTCTGGAGGTAATTTGCGGGCAACCTGGCCT  
CCGGCGGGGCGGCCGGGGCCACTTCCCTGTGCTTCGTCTACCCGCTGGATTTGCCCCGAACCCGCCTG  
GGGGCCGACGTGGGCAAGTCGGGCAGTGAGCGCGAGTTCAGGGCCTGGGAGATTGTCTGGTGAAGAT  
CACCAAGTCCGACGGCATCCGCGGGCTGTACCAGGCTTCAAGGGNNGGTGCAGGGCATCATCATCTAC  
CGCGCGNCTACTTCGCATCTACGAACCGNCAGGGCTGCTCCCGACCCCAGACACGCCATGNGGTGAGC  
TGAAGATCGGCAGACGGACGGCGGGGGCGTGGCTCTACCCTCGCACGGCGGGGGCTGAGAGCAGCG  
GCGCAAGGACGCACATGACAGCCCGGGCTGTGCGAGACTAGACAGGCGAGGCTTTCAGGCCTGGCAG  
CN

>'990809A-018.scf' came from CONTIG 75 at offset 0;"C:\export\EG\_DB\990809a\990809A-018.scf"(57>603)

AAAGCGCTCAAATTTATGACATACAACAGCTGTGGCCAGACTCTGCTTAAATCAAGAGACAATATGTC  
TAGCAAGCACTGCTATGGAAGAACTGGAAGAAATTGTGTGGGCCAAAACAAAACCTTGCCAATGGGACTTCC  
AGTATGATTGTGCCAAGCAACGGAACTCTCAGCAAGGCTATGAGAAGGGAAAGGGACTGTGTGTC  
AAATATTTTGTAGCAGAGGGCAGAATCCGATCAAGGGGAATTTGTGGAACATCTTATTTCCAAATGTGT  
CATTATCCAACATGGGCACATAAACTCATATCTAAACCTTGTTGTTGAGGGGATTTCTTACTNTCTGCC  
GCTGGNGTGTAGTCACATTGTGGGACACCTGTGTAAGTGGGTGCGGATCATTGTGTGCGNGACGGGTG  
GANAGAGGGACGCGNGCGCGGTGGTGTGTTGGGAGAGAGATGAAGAAGGGAGGCGATGTTGGGGAG  
GCGGGGACGAGGCNNGGCGGTTTGTAACAAACCCGNGGAAGGCCCCACCTTTTGTGGCTTCTATTT  
TCGCC

>'990809A-019.scf' came from CONTIG 76 at offset 0;"C:\export\EG\_DB\990809a\990809A-019.scf"(54>593)

CGGCAGCATGTCTCACAGGAAGTTCTCTGCTCCCAGGCATGGGTTCCCTGGGGCTTCTGGCTCGGAA  
GCGCAGCAGCCGGCACCGCGGGGAAGGTGGAAGAGCTTCCCAAGGATGACTCTTCCAAGCCTGTGC  
ACCTCACTGGCTTTCTTGGCTACAAGGCTGGCATGACCCACATTGGGGAGGGAGGTCGATAGGCCAGG  
GGCCAAGGTGAACAAGAAGGAAGGGGGGGAGGCTGTGACCATCGGGGAGACTCCGGCCCCATGGTG  
ATTGTGGGCATCGTGGGCTACGTGGAACACCCCGGGCCTCCGGACCTTTAAGACCATCTTTGTGAGC  
ATATTAGCGACGAGGGCAAAGGCGCTTTACAAGACTGCATAAGACAGAAGAAGGCCTCACAAAACCTG  
AGGAAGGCAGACGCGACGCAGAAGAGTTGGAGGATTACAGATAAAAGACTGCAGTATCGGCATGCCA  
ACCAATCGCTGTCTTGGCAGAGAGCCCTATGAGTCAGGACGAGCCGNGCCAAATGACGGCGGGAGTG  
GC

>'990809A-083.scf' came from CONTIG 77 at offset 0;"C:\export\EG\_DB\990809a\990809A-083.scf"(55>579)

GTTGACCTTGACCTGGGTAACATGAACGTTTCCTTGATATCCGCCTCACCAAGGACAATAATCTGACC  
ACTGGCAAGATCTATCAGTACGTCAATTAACAAGGAACGCAAAGGAGATTATTTGGGGAAAACCGTCC  
AAGTGGTCCCGCACATCACAGATGCAATCCAGGAGTGGGTAATGAGACAGGCCTTAATACCCGTGGA  
CGAAGATGGTCTGGAACCTCAAGTGTGTGTTATCGAGCTTGGTGGGACAGTAGGAGATATAGAAAGC  
ATGCCCTTTATTGAGGCCTTCCGTCAATTCCAGTTCAGGGTCAAAAAGAGAGGAACCTCTGTTATATTCAT  
GTCAGCCTCGTGCCGACGCCAAGTTCACAGGGGACAGAGACTAACCACAGACAGGGTCGGGACTC  
AGAGGCTTGGCTTCCCAGTCTGTTGTTGCCGGGCTCAATCTCTGACCGCAGGAAAGAAAATATGAGTC  
TGCTGGAACCGACAGGACTGGCCTGAGCTCGCCTTACGGTCCCTATGTAGA

>'990809A-081.scf' came from CONTIG 78 at offset 0;"C:\export\EG\_DB\990809a\990809A-081.scf"(61>602)

GCACGAGGGATTTTTATTTTTTACGCTGTTGTTTCAAGGTGGAGAATAAAAAACTGACTCTGTTCCA  
ATCTTATTGGTACCAATCAGTATACATCACTTAAAGCTGTTGCTCCTGAGCTTATATTGAAGTAGCCCT  
AAGTACCTGGTGAAGTTTACATGTATAAGAGAGTTACACATTTGGGGGTTCAAGTTGATTCAACGTAG  
TAACATAAACATACTCTAGAACTATACACAAAGATTTACAATTTAAAAACATAATCAGNCACCTTATT  
ACCTGGAAATTTATTACTTTTTACTACTCTTCATTTGCTTCAGACAATACATATTTTCATTCCTTATAATC  
TAGAATTCAAGAACCAGGACTCTAATCTTTTTCTCTCATCTCTTATCTTTCTAAAATTGCCTGGGTAGA  
GATCAGGTATAAATATTTATATTAATTGATTATTATGGTAGGGGGAGGCAAGAACCAACCATACAGGA  
TCATGCTACGATTTAGACATAGNCAAAACAGAGAAGGANNATATTTTTAAGGATATATAT



>'990809A-077.scf' came from CONTIG 79 at offset 0;"C:\export\EG\_DB\990809a\990809A-077.scf"(55>571)  
 GTGGTACTAACCTTACTTCCCTTAGTGTTGACCCGGAGAAGGAACGATGGTGCTGGATCTGGATTTGTT  
 TCGGGTGGATAAAGGGGGGAACCCAGCACTCATCCGAGAGTGCAGGAGAAGCGCTTCAAGGACCC  
 GGGACTGGTGGACCAGCTGGTGAAGGCAGACAGCGAGTGGCGACGATGCAGATTTCCGGGCAGACAAC  
 5 TTGAACAAGCTGAAGAACCTATGCAGCAAGACAATTGGAGAGAAAATGAAGAAAAAAGAGCCAGTG  
 GGAAATGATGAGTCCATTCCAGAAGAGTATTAATCTCGATGACCTCACTGCAGACACTCTAACTAAC  
 CTGAAAGTCTCACAGATCAAAAAGTCCGCCTCCTCGNCGACGAAGCCTCTGCAGGTGACGCCGAGCGG  
 ATAAACGGGAGCTGACGCCTGAGAGCGTTCGGAGATCGGGACCTCTGCACCGNCGNGCCATCACGA  
 GACAGATGCGACACAAGANAGAGATTGGGGGATGTCAGNCAGAGA

>'990809A-085.scf' came from CONTIG 80 at offset 0;"C:\export\EG\_DB\990809a\990809A-085.scf"(27>51)  
 TATCTAGTGGTTTCCCCCGCTTCT

>'990809A-082.scf' came from CONTIG 81 at offset 0;"C:\export\EG\_DB\990809a\990809A-082.scf"(61>456)  
 15 GCACGAGGCTCTGGCGTCCCGAATTCGCTGTGTTTTTCTCACAGGCTGTGTCCCGTCCGCTGGCCCAA  
 CACCTCAGGGGAACGATGGGCCGAGAGTCCACAGCCACTGCCGGCATCACCGCGGAGCTGGGTTCT  
 GCCGACAAAATTGAAGAAGATGCCCTGCTCCTTCTACTTCTGCAGATAAAGTGGAGAGTCTGGATGG  
 GGATAGTGAAGCTAAGAACTCTTGGGATTAGGACAGAAACATCTGGGAATGGGTGATATTCCTGCA  
 GCTGGCAATGCCTTCCAGGAAGCAGCTAGNCTTTTAGGTAAGAAGGAGGGAGAGACAGCTAATGAAT  
 20 GTGGAGAAAAGCCTCTTTTTTTATGGGAATCGCTTTGGAGTGGGCAGATGGGAGATGGG

>'990809A-071.scf' came from CONTIG 82 at offset 0;"C:\export\EG\_DB\990809a\990809A-071.scf"(49>598)  
 TAGGCGCAGATCACCTCGGCCTGGTCAAGTTCAAGAACCACAGGCCATCCAGACCGTGCGCGCCCGG  
 25 CAGAGCCTGGGGCCGGGGCGCTGTGTGCTAGAGCGCGGGGGCGCGCTGGCCTGCCCGAGGTCTGTC  
 CAGCTTCTGGGCCCCCTCGGCTCTCGGAGCGTGAAGTGTGCTCCTGACTGTGCTCCGAGTGGCGAGGCT  
 GCGGCTGCGGACACCCCGTGGAGGAGCGTGGAGTACGGGTACGCGGGAGCCAGCAAGGAGGGG  
 GACAGCCACGGAGAGCTGAGGATGAGGATTCGGCCCCGGGCGCTCAGGCTCTCAGGACGTGCCTGTC  
 CCAGCCCAGCCTCTGAGCTCCAGCAAGCCCCGACCGCTGCGCCCTATTGCTACTCTGCAGATGTCCGA  
 CCAGCTTGGGCTGGGCTGCAGAGGCGGACCCGGATCGTGACCACATTTAGACTGGAGCCGCTGGGAC  
 30 ACGGACAACCCAGCTAATTGATCACGAGCCATCTGGGTGTGGGCTGGTCTCCGACCCCCCTCGCCC  
 TTTTACATC

>'990809A-070.scf' came from CONTIG 83 at offset 0;"C:\export\EG\_DB\990809a\990809A-070.scf"(59>543)  
 35 GCACGAGGGTTTACATAAAACACAGGGAAAAATGTCACGCTTGAAGGTGGCCCTTCAGTTCTCCTAG  
 TGAAAGGGCATGTAGCAACAGTACCTTGTGCCTGGCCATCTTTACTCCAGCTCACGTGCTCTGGTACCT  
 CATTGTGTCTTCACAGCAGCCCTGGAAGGCGGGAGGGGCGCTACTGCCATCCTTGTGTGTGTGAAAAAC  
 TTGAGACCGAGATAAAGGCCAGCGACTTGCTGACTAAAGTTGCCTAGGTTGCCAAGCTGTGCCATCA  
 TTCCACACTCAGCAGAGACGGGGAGAGCACCTGTGGGGCAGAGACTGAAAAAAGTCCCCAGNTCCGC  
 TTTGTCCTCCTGGGCCCCGCGCTGCCCTGCCAGCCAGGTAAGTCTTTCTCTTACGATGATAAACCTG  
 40 ACACAGTCTTGTGCGACACAGGGGCTGGCTATCTCTGCATATCACAACATACTGGCTCCTGGGGCA  
 CGNAAGA

>'990809A-080.scf' came from CONTIG 84 at offset 0;"C:\export\EG\_DB\990809a\990809A-080.scf"(61>603)  
 45 GCACGAGGCTTGCATCCAGTTTGACTACAAAGGAGCTTCATCTTTCAAGATAACCCGTGGAATTGAAG  
 CAGTTGGTGGTAAATTAAGCGTGACGTCAACAAGGGAACATGGCCTATACTGTGGAATGCCTGCGG  
 GATGATGTTGATATTCTAATGGAGTTCCTGCTCAATGTCACCACAGCACCAGAAATTCGACGCTGGGA  
 GGTAGCTGCCCTCAGCCTCAGCTAAGGATTGACAAAGCTGTGGCTCTCAGAAATCCACAGGCTCACG  
 TCATTGAAAATTTGCATGCTGCCGCTTACAGAAATGCCTTGGCTAATTCCTTATATTGTCCTGATTATA  
 GGATTGAAAAGGACACCAGTGAGTTACTGACTATGTACAGAATCATTTACAGTGCAGGAGGCTTTGT  
 50 TGACTGGGGNGTCATCTGCCTAAGCAGTGCTGACACTTCTACATAAGGGGGCTTGTATTGGGCAAGC  
 CAGACCATGAGGAAATGAGACAGAGAGACGCCGCCATCCGTTTGGCAAAGCACCTGAAGCAAACAA

>'990809A-076.scf' came from CONTIG 85 at offset 0;"C:\export\EG\_DB\990809a\990809A-076.scf"(56>562)  
 55 TTTGATTGGGAGGAAAAAGACAGGCCAAGAAGCTCTCTCTCAAACAACCATCTCATGGACCCCATTC  
 AGGAAAGCTCTGAGTATATCATTTTCATGTCATCCAGTTGGCATTGATGAAGAACCCTTACAGTTCCGA  
 GTTCTTGGAACTCTGTAGTGCCACCTTGACGGGCCTCACCAGAGGGGCCACCTACAACATCATTAG

GGAGGCAGCAAAAGACCAGCAGAGGCAGAAAGTTTCGCGGGAGGGGGGGTACCGNNGGCATTCTGTT  
GACCAGGGCCCCGAGCCAGCCCACACATGACTCCTGCTTCGACCCCTCACGGCTCCCATATGCCATTGG  
AGAGGGTGGGAGGGATGGCTGTTTGGCTTTACTCTCGGCGCGCTTAGCTTGGCGTGGGCATTCCATGC  
GATATCTATGTGCTGACAGGGAGAACTCAGAAGAGGAAAGGGACGGAGGGAGATGGCGAGAGGCGC  
CGGCTGAATGAAAGAGATAGGTGACCAGAGCCAG

>'990809A-005.scf' came from CONTIG 86 at offset 0; 'C:\export\EG\_DB\990809a\990809A-005.scf'(5>15)  
ATTTTCGCGGN

>'990809A-011.scf' came from CONTIG 87 at offset 0;"C:\export\EG\_DB\990809a\990809A-011.scf"(49>63)  
TTTTGTTTAACACCT

```
>'990809A-023.scf' came from CONTIG 88 at offset 0;"C:\export\EG_DB\990809a\990809A-023.scf"(1>14)
GCCGCATGAAACCC
```

>'990809A-041.scf' came from CONTIG 89 at offset 0; 'C:\export\EG\_DB\990809a\990809A-041.scf' (5>17)  
ATTTGAAACCCC

>'990820A-045.scf' came from CONTIG 1 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-045.scf"(58>535)  
AGGCACGAGGCAGAGACGCAGCAGCGGCTCCCTCTGCCCCACACCCACCGCGCCCTCGCGCTCGCCTCT  
CCTTCCGGAGCCAGTCCGTGCTACCGCAGGCGCCAGTCCACCACCACTCTGCAGCCATGTGCACC  
AGGTCCGTGTCTCTGCTCTCTACCGCAGGATGTTGCGCGGCCCCGGCACCGGAGTCGGGCGAGCTCC  
ACCCGGAGCTACGTGACCACATCCACCCGCACCTACAGGCTGGGCAGGGCGCTGCGCCCCACACCAAG  
CCGCACCTCTACACCTCGGCCCCGGGGGGGCGGGGGCCCCAGCGCTGCCTGGCCGTGCGCTGCGGGC  
GGCGGGCCGCGTGGGGGGGTGGAGAATTGGGGGATTCCGGGGCCGACGCTCACACGATTCAAGACA  
CCGACACGGGAGGGGGGCGCAGACCCAAGCCGCTCGCAAATAAGGACAGGGGCTCTGAGAGAAAAA  
GAACG

>'990820A-013.scf' came from CONTIG 1 at offset 3;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-013.scf"(54>434)  
CCCCGCCAGAAACGCAGCATCGCTCCCTCTGCCACACCCACCGCGCCCTCGTGTCTCGCCTCTCCTT  
GCGGAGCCAGTCCGTGCTACCGCAGTCGCCCAGTCCACCACCACCTCTGCAGCCATGTCCACCAGGT  
CCGGGCCCCGGGCTCCTACCGGAGGATGGCGGGGGGCCCGGACCGGAGGGCGGCCGAGCTTCACCG  
GGGTACTGTACCAATCCACCGGACCTACAGCGGGGAAGGGCGCCGGGGGCCACCCCCGCCGGAC  
CCTTACACCGGGGCGGGGGGGGGCCCCCCCCCGCCGGCGGGGGGGGGGGGGCGGG  
GGGGGGGGGGGGGGCGGGGGGCTTGGGGGGCGGCCCCCAAACCAA

>'990820A-002.scf' came from CONTIG 2 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-002.scf"(62>518)  
GGGCGGGCGTGGTTTTTTTTTTTTTTTTTTAGCGGGGTGGCTAGGGGGCTTCTGGAGTCTTTTATTT  
TGTAATATATAAGATACCTTTTTTTTGTTTTATTTGTTGAAAAGAAAGCTTTCATTGGCTTTTTATGG  
TGGGGGACATGGGGGGAAGGGGGGAACCCCATGCATGGCGCACTCCCCCCCAGGGGGGGGGGGGGG  
GGGGAAAGGGGCGGAAAACCCCGGGGCTCCTGGTGCAAAAGCTTCCCGGGACAGGGTCCAAATGCAG  
GAACCAAAGGGGCCGGGGAGGCGGGGGGGGAACCGCGGAGGGGTTCACTCTTGGGAGGACATAACA  
TGATTCGGCCCCAACTTCCCCACCCGGGGTAAAAATTTCTAAACCCCGGTTGGACTGGGGGGCGGG  
GGGGCCGGGCCCGGGTGGGTGGAACAGGGGCCCAAAAAAAAAAAGCGACC

>'990820A-043.scf' came from CONTIG 3 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-043.scf"(58>460)  
TGGCACGAGGGAAAAGGTGGCTGGTGGTGAATTGCTGGGTTCCTCCCTGGTGCCTACTGGGTTTTCCTCC  
AGGGTGGCTGGTTGGGGCGGAGGGCGGGGCCCCCGGCCCTTTTGGGAAAATGCCTGGGACCCCC  
CTTGGCCCCCTCCCTGGCGCCTGGGTGGGAAAAAAAAGGGAGCAAAAAAGGCCCCCGGCGGGGGAAG  
AATGGGGCCCCGGTTGGGGGGGGCCCCGGGGAAGGGCGGGGCCCCCTGTGTCCTCCCTCGGGCCCC  
GGGTGGGGGAGAAAAAGAGGCCCTGGGGGGCGGACGGGCACTGGTTGGGGGCTCCCGGGGACCT  
CCCTGGAACCTTAAAGGAATTTGGTGGGACAGGGGGGGGGGGGGGGGACGGGCCCGGGCCAAA





CAGGAACGTAGGGATAAAAAAGCCAGATTTTAAGGGGGCCTCGGGGCAGTGGGACAGGGAGAACTTT  
TAATTTCCAGAATTTGTTTCCTAGGGGGAAGGGGGCCGGGGGGGGTTCGGGGGGGGGGAC

>'990820A-009.scf' came from CONTIG 15 at offset 368;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
009.scf"(60>430)

GGACGAGGGGGGGGTCGGGGGGGGGACCGGGCCCTGCTGGGTCCTGCTTGGGCCCATTGGTCCCCCTT  
GGGTGCCCCGGGGGCCCCCTGGAACCCCAAGGGCCCCGGGGGGGAAGGGGGGGGGAAAGGGGGAAA  
AGGGGGACAAGAGGGGAAATAAGGGGGGACCGGGGGTGTTCCTGGTGTTCAGGGGGCCCCCCCCGGGCC  
TTCCCGGCTTTGCTGGGGAGCAAGGGGTCTTTTCGGGACCTTTGGGTGCTGGTGGGTCCCCCGCGGTGC  
CCCCGGGGTTTTTGCGGGGTNTTCCGGCGAAAAAGGGACTGAAGGGCTGGCCCCAGCCCCCTTTGGGGCC  
CCGGGGGCCAAAGGCGGGATGGGGATGGTGGGG

>'990820A-019.scf' came from CONTIG 16 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
019.scf"(60>343)

GCACGAGGGGGGGGCGGGGTGCCGGGTTTGGGGCGCGACGCCGAAGGCGTGGGAGGAAGGCGGAGT  
GGGGGCCCGGCCGGGGGCCGTCTTTTGGGAACGGCAACGAACAGGAAGTTGGGGCCCCCCCCGGGGCCCG  
GGGCGGACGGGGGGGGGGTGGGGGGGGAAGGGGGGTTCGGGGGGGGGGCCCCGGCCCCCTGGGGGGGTTT  
GTGGGCTTGAAATTCCAAAGGGGGGGAACCCTGGCCCCCCCCACATAATTCTTCCTGGGGGTGCAAG  
GGGGGGGGGGGGCGCCG

>'990820A-094.scf' came from CONTIG 17 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
094.scf"(59>475)

GGGGACGAGGAGAAGCCATTAGAGGTTGGGCCCCATGCACAGATGGAATAGACTACACCAATCATTC  
AAACACCCTCCCTTCTTGTTACTTTGCACGACTTGCAAATGAGGAGAAGAAGAAAAAAATCGCTGCA  
CCCCAACCAAGGACACTGAGTGGCAGAGCAAACCTGGCACTTTGCGTGGAAGAAGATGCACCTGAAA  
TTCTGGCAAAAAGCAAGACCGGGGGCCTGATGGGAAGACATGGTTATGGGCCGGACCCCCCGGAGCA  
CATAAATGGGGGGGACCAGAATCAGCCCTCTTTAAAGTGGGGGATGGAAAAGTGATGGGACTGGAA  
ACCCGGGGGCTAAGGGGGGGGGTGGGGGGGTAAAGTTTATAGGGGGGGGGAAGGGGGGGGTTTTTCG  
GTGGGGGGGCGAGCCC

>'990820A-005.scf' came from CONTIG 18 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
005.scf"(118>329)

TGTCTTTCCACTTCAGGGATGACCCTTTCCCAACGACGTGAATCTCGCAAGGCTTCCTCCCTTTTGTTAA  
CGAATGGGACGTCTGGCGGGAGAGTCCGGGGGTTGAGCACACGCTTGGAGGTGGTGGGCCCCATGGG  
GACCTGTACTGGCTTGGCCGGCTGTGTGTGTGGACGGCGCTTTCGGGGCGACTTTGGGGGGGGCCCAA  
GTCCCCA

>'990820A-017.scf' came from CONTIG 19 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
017.scf"(60>389)

GGCACGAGGAAGTACTTCTTGTCTGGGAAAATTCCCATGGGATGGGAGGGACGCCTGGGTAGGTCTT  
ACAGGTCTATGTGGGTGCGCAAAAGAGGTCTGGGACGGCGACCTGAAGTGAAGTTTACATTAAAGGC  
TGGTCACCCATTGTTTGCATACATTTTATGGTCTTTGAGTTTTGTTAAGGTTCTTATGACTTTTTTCT  
GGGGGCTTTTCTGGGTGGGCTAAAGAGGGTTTAAAGCCGTCCGGCCTGGCAATGCCAGAAAGACCCC  
AGGGTTCAATCCCTGGGGTTGGGAAAGATCNCCTTGGAAAAGGGAAATGGGAAA

>'990820A-008.scf' came from CONTIG 20 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
008.scf"(55>287)

AAAACATCACGTTGGGAGAACCGCCTGGGGTTTTGCACTCGGGNNGGGGGTATTTTGGGGACCTTTAC  
TGGGCAGCTCCTGAAAGGCGAGACACTGTGAACATTCAAGTGAAGCAAAAGCCTTTCATGATTACAG  
TGCAGCAGCCGCCCGAGCCCCGTGCTTGGCAACATTCCCCCAAGGATGGGAGGGCGGGAGGGCCCA  
TTCTCCGGTTTTTTTTTAGCTTTTTTTTA

>'990820A-004.scf' came from CONTIG 21 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
004.scf"(209>270)

CCGGGAACCCAAAGGGATTTTTTCTGTTTGCTGAGATTATACTATGCCTGGAGATTCTGATC

>'990820A-016.scf' came from CONTIG 22 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-016.scf"(54>535)

GTCCACAGGCGTGCTGGGCTCCCCGCTCATCTCACTGCTCTTCTGGATCCTCATCTGCTTCTCCATCGCG  
GCCCTGTTACCAAGCGCTACAGCATCCGCCCCCTCATCGTGGCGCTCATCCTGCGTTCCATCTACTAC  
CTGGGCATTGNGCCACGCTCAACATCCTGGGTGCCCTCAACCTGACCAACAAGATCGGGGTCGTGGG  
GAGCTTTGTGGGCAACCGTGGCACCTTCATCCGGGGCTATAAGGCCATGGGCATGGACATGGAGTTCC  
TTACCACGTGGGCTACATTCTAACGGGGTGTGTTTGGCCCTTTGGCCCCGAGCCTTTTACGGATTCTGTTT  
TTTACCCTTTTACGGGAAGGACCTGGAAAAGGGAAAAAAGGGACCCGAAGGCCGCCAACTGCTGCC  
GCCGGTGGCCCCATCGGCTACCTTTTCTTTGGGGTTCCTTCCAAGAACATTTATCTTGGGGGCCGGTGC  
C

>'990820A-033.scf' came from CONTIG 23 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-033.scf"(54>544)

CGCCGCGCACGCCATGGGAGGCCGGGGACTGACGACGAAGTCATACGGTAAGCGTCGTCCTAATCGG  
ATGGAGGATGGTGGCTGGGAGATGAATCGGAAGAATTATATCTGCTGGTGAAGGTTTCATTAAATGG  
TGCAACTCAGGATCTCAGGAAGAGGGATACAGCCAGTACCAACGTATGCTGAGCACGCTGTCCAGTG  
GGAATTTTCAATGGGCAAAACTTTGCTGGTATATGATATGAATCTCAGAGAAATGGAAAATTATGAAA  
AAATTTACAAGAGATAGAATGGTGCATTGCTGGGAGCCCATGAAAAAATTGCTGAGTGCAAAAGCCA  
ATTCTTCAGCAAAACGATACAAAAAATGGCAGATAGATGCACTGGCAAGGGATCCACACATCAGCAG  
CCCCAACGCAAAAGACTCGGGCCTGGAAAGAATAGACTCTTAAATTAAGAGGGNGAAGAAACGGAA  
AGAACGAACGCCAGGCTC

>'990820A-020.scf' came from CONTIG 24 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-020.scf"(60>504)

GCACGAGGCAGAGGTGCAACTTTCTTCGGTACGTCCCGAATCCGGGTTTCATCCGACACCAGCCGCCTC  
CACCATGGCCGCCTAAGTTTCGACCCCCAACGAGATAAAAGTCTGAGGTGACCCGGTGGGG  
AAGACGGTGCCACGTCTGCCCTGGCCCCCAAGATCGGCCCTCTGGGTCTGTCTGCAAAAAGGGCGGT  
GATGACATCGCCAGGGCAACGGTGGTTGGAAGGGTCTGAGGATTACAGGGAAACTGACCATTNCAAA  
CAGACAGGCCCAGATGGGGGGGGCCTTTGGCTTTGCCTTGATCTTCAAGCCCCAAGACCCCCAGGAA  
AGAAGAAAAAATAAATTAACCAAGAACATTTTTTTGAGAATGAAATTGCCGGGGAGCGTTGGGGTT  
TATTGGAATTTGGGACATAGGGAATCGGGACGGCGGGGGG

>'990820A-010.scf' came from CONTIG 25 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-010.scf"(60>532)

GCACGAGGCTGTGTTCTGGGGAGAGGAGCACCACTCCGGACATTACTGGCTACATAATCACCACCACC  
CCAACAGACGCGCCAGCAGGCGATACGTGCTCTGGAGGAAGAGGGGCATGCGGATCAGAGTTCTCTGC  
ACCTTTGAAAACCTGAGTCCGGGCCTGTTGTACAATGTTTCAGTGTTCACACTGGCAAAGATGACAAGG  
AAAGAGTCCATATGTCTGATACCATCTTTCCATCTGTCCCTCCTCCCAGTGATTGGCGATTTACCAATG  
TTGGCCCTGACACATGCGTGGCACCTGGCCTCCACCTCATCCATCGAACGACCACCTCTGTTGCTCTG  
GCTGGGAAAAAGAGGGAGGTGCCGGCTGCCTTTCTCCTCAACAACCAGGATTTAAATTTCTGCCGGCC  
CGACTTTATAAGGTTCAAGGTAAAGAAAAGAAGCAACTTAAGAAGAAAAAACGCTTGATTCCC

>'990820A-007.scf' came from CONTIG 26 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-007.scf"(58>532)

TGGGACGAGGGGGGGCCTGGGGGCTAAAGGGAGAAAGAGGACGGCTCCTGGGGGGGGAATGGGGGT  
AGGGATGGCCGCTCCCGGGAGCCCGCGACCGCGCCGGGAGGGTTTTGTGGCCTGCCGGCTCCCCCA  
GGGCCCCCAAAGGTGTGAAAGGGGGAACGTGGGCAGGTCCTGGTGGGTCCTGGTGGCTGGTGGGTTG  
CCCGGTGGGTGCGGGGGCCTCCTGGCCCCCTCCTGGGAGGAATGGGTTACCCACGCCCCCCCCAGGCTC  
CAGGGGGGGGCTCCAGGGCAAAGATGGGCCCCCAAGGTCCACCCTGGCAGGTATTGGGGCTTGTGG  
GAAGCCCGGGATTCTCTGGACCAAGGGGTTTTTTGTGACCAGAGGGGAGGGGGGACCCGGGCCCCA  
GGGGCCTTCGGGGGGCTCAGCCCACTAGAATTGATGATTATTGGAGCCCAAGGTTGAGGCCCCCAGGCT  
CTAG

>'990820A-023.scf' came from CONTIG 27 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-023.scf"(60>543)

GCACGAGGGTGAGGCGGGGTGGGGGCGGAAGCACGGGTCTCCAGCGGCTCGACTGGGGAGTTTTTGG  
CTGGAGCAACGGGGAGCACCATTGGATATCTGGACTTGGTATGACGAGTTTTGGGGAATTACATCGGA  
ACCAGAGCTTGATTCTGATGAAGAATGATGATTGAATTGGGCAGAGAGACCAAAGATCTTGATGAGGT  
CGAAGAGGACGAGGACGACGAGGGGGGCCGAACACAACGAAAAACACCCTGGGTGGTGGGGGGG  
5 GTGCAGCAAGACAAAAAGACCACCCACCGCCGGGGGGGGGACGGCCCCAAGGGGGACCATAGTA  
AGAGGAAGACACCAGCCCTCCAAAACCATATTAAGCAGGAAACCAAAAATTACTCGATGAGCAGAGT  
CCTGCACGGGGCGCAATGGTTTTGGCGGAATGATGAAATCGGCTTATAAAATGGACCTTTGGGCTCTG  
ACCCGAAGAAGTTT

10 >'990820A-031.scf' came from CONTIG 28 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
031.scf"(54>351)  
CTGCCTGCAGGGGCATCCTGAGTGTGGATTCCACTGTCAGCTCCTCTCCTTCCACCTGTGCTGTGACTC  
CGAGGGATATGTACGTTGCACTTTCTCCCAGAAAACTCTGGGCCAAGTGCTGTGAACCGGGGGAATGGA  
GAAGGCTAGAGGGAGACCCACTACCACCTTCAAAGACCTGTGCCAGAGAAACCCAAGGGGGGAAGA  
15 AAAGCTGGCATCGCGGCGNGGGTCTCAGGAGATACCGGATAGAGACTGACAGCTTTGATGTGCCCTGT  
ACCCAGTGCTTTGCTTACAGGAGGT

>'990820A-027.scf' came from CONTIG 29 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
027.scf"(60>518)  
20 GCACGAGGGGGTCTTGACAGCATAAGCATCATTGACACGCCGGGGTATCCTGTCTGGAGGAGAAGC  
AGCGGCATCAGCAGAGGGTATGACTTTGCGGCCGTCCTCGAGTGGTTTGCCGAGCGGGTGGACCGTAT  
CATCCTGCTCTTTGACGCCACAAAGCTGGACATCTCTGACGAGTTCTCAGAGGTCATCAAGGCCCTCAG  
GACCACGAGAACAAGATCCGTGTGGGGCTGAACAAGGCCGACCAGATTGAGACGCAGCAGCTGATGC  
GGGGCTACGGGGCCCTCATGGGGCCCCTGGGAAGATCATCAACACCCCGAGGGGTCCGGGTGACATTG  
25 GCTCTTTGTCCACCGCTCTCATCCCGACACGCAGCTTTGAGCTGAGAGAGACTCTTAAGAATCAGCTT  
GCCCCAAGCGCCCTAGAGCTATGACTATAAAGGGCGGGGCCAGGCAGCGATT

>'990820A-022.scf' came from CONTIG 30 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
022.scf"(55>247)  
30 TTTAAGTACGAGGGTGAGGTGAGGGGGGGGGAAGCACGCAATCCACCGGCCGACTGTGAGTTTTTGG  
TTGGAGGAAGGAGAGCACCATGGATACTGAGTTGAATGACGAGTTCGGGAATGACATCGCACCAGAG  
TGGGCCGGTGGAGGAGAGGATGTTGAAAAGGGCTGAGGGACCAAAGATGTTGATGAGGT

>'990820A-029.scf' came from CONTIG 31 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
029.scf"(60>526)  
35 GCACGAGGAGCGCCGCTCTGGCCGCACTGCGCTCGCCCTGAGCTCCGGGCTCCTGCTAAGCCAGCGCC  
GCTGTGCGCTCCCTCCAGTCGCCATCATGATCATCTACCGGGACCTCATTAGCCATGACGAGATGTTCT  
CCGACATCTACAAGATCCGGGAGGTGCGGGACGGGCTGGGCTGGGAGGTGGAGGGGGGAAGATGGTCA  
GTAGGACAGAGGGTAACATCGATGACTCGCTCATTGGTGAAATGCCTCGCTGAAGGCCCGAGGCGAA  
40 GGGTACGAAAGCACAGGATCACTGGTGTGATATTGTCATGAACATCACTGCAGAAAACAGCTNACA  
AAGAAGCCACAGAAGACATAAAGATACAGAAGGCAACAAGGAACTGAAGAAAAGACAAAGAGAA  
AACTTTTGAAGGGGCGCAAACAAACAGCCAACTGCTATTAAACATAAGCTTAGGGGAAAAGAT

>'990820A-021.scf' came from CONTIG 32 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
021.scf"(54>537)  
45 CTTAATTCCTTCTATGTCCAATGGGAACAAGCGATGCTGGACCCTTTTCGATTACATGGATGATATGAG  
ATGGACGGAAGGGGNAGGCCGAGGGTCGGTGGAAGAGCACAAATGAGTGTTATCATGCCATCTGTT  
GGTCACAGNGTTAACTTGGAATGGATCTTACGAAGGTAGTTCTTCCAACATTTATTCTTGAAAGAAG  
ATCTCTTTTAGAAATGTATGCAGACTTTTTGCTCATCCGGCCCTGTTGTGAGTATTAGGGACCAAAG  
50 GATGCCAGGACCGAATGGTTAAGGTGTGAAAATGTATTTTACCCCTTTCACGCAGAAGAAAGGACGG  
TGGCCAAAAGCCACCAACCCCTTGGGCGAAATTTAGGGCACTGACATACAAAGAACGAGAGAGGGGG  
CAGGCCAAAAGACAGTCCTGTTCCAGAAAAGAACATTGGGGCGGCAGTTCCACATCCCCCTTACTTTT  
TGCGGGGG

55 >'990820A-032.scf' came from CONTIG 33 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
032.scf"(54>526)



0990820A-034.scf

TGCCCCGTGAACCTGCTCCGAGCCGGCCGCATCTTCGTGTTCGAGCCACCCCCGGGCGTGAAGGCCAAC  
ATGCTGAGGACCTTCAGCAGCATCCCCGTGTCTCGGATATGCAAGTCTCCCAATGAGCGTGCTCGCTTG  
TACTTCCTGCTGGCCTGGNTCCACGCCGACATCCAGGAGCGCTTACGATACGCACCCCTGGGCTGGGC  
GAAGAAGGATGAGTTCGGGGAGTCTGACCTGCGCTCGGCCGCGACACGGGGGACACGTGGCTGGAC  
5 GACACAGACAAGGGAGACAGAACATCTCGCCAGACAGATCCCCGGTCCGGGCTCAGACCCTGTGGCC  
CATGCTNTATGGGGCGGGGGACACGAGTCGACAGCGCTGCTACACTTCCTGACGCCGTCAACCCGGGT  
TNGAAGNGGTCAGCTGGCTGCAGGCGAGCACAGGACATCAAGCGGCGCATAGCGAAGGATGGCAT

>'990820A-028.scf' came from CONTIG 34 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
028.scf"(60>520)

10 GCACGAGGGTCATTGCTGGTTCTGGATTTTGGCACGTCTTTGGGTCTCATGTTGCTAACCCAAACACCA  
CAGGACTTAAGGCTGTGAGGAACAGTTCTTATTTGGGATTGAGAGCAATTACTGAAGAAGGATTATGT  
TCTTGTGAGAAAACGAATTTATGATTGAGAAAACCCCTAAAGACAAGGTACTAAGCAACAAAATATGCA  
AACAGATGTTGNTAATTAAGTGTCAATTTTGTCTTACAGCTGTTTGCAGACAAAGATCCAAAGACAGC  
15 AGATTAGTTTACAAAGGGTATCTGATTATTACTTTGTTGTGNGTGTCTCCTTTTGTCTTATAATAGTT  
ATATCTTTAATTTACAGAACTTCGGCTTGACACTGAGAGAAGATTGGTTAAAGTCCTGTTTACAATAT  
TCGGTTTTGGCAGGATGAAAACGTACTCTGGTTGCTATTAGATGACTGN

>'990820A-034.scf' came from CONTIG 35 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
034.scf"(60>526)

20 GCACGAGGGCCGGCTCTGGGTGGTCAGGCCTTGCGAAGCTGACCTGGAGGAGAACATTAAGAAAGGC  
AAAAAGTGATCCGGACCCCCAAAATCTCCAAGCCTATCAAGTTGAGCTTTCTGGCTGCACCAGCAT  
GAAGACATACCGAGCTAAATTCGCGGAGGGTGACAGACGGGCGGCGTGCCACCCCCACAGAAC  
CACCACCTTCCGNGGAGGTTCAAGTGGCCTGATGGGGAGGGCATGAAGAAGAGCATGAGGTTTCATC  
25 AAGACCGCGCTGCCATTACACCGCCCCGAGACATGACTCTTTGGGCCCTGACTACAGAAGATGATGG  
GGACAGGCCTAAGCCGGGCAGGGGACCGGAACATTTGCTGGCCTGAATGTTCCATTATTTTGGTCCC  
GGGGTTCAGGCCAGTTTTTAATGGGTTAAGGGAAAAAAAATCCCCAAATAAAATGGGCTT

>'990820A-037.scf' came from CONTIG 36 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
037.scf"(11>408)

30 AATTCGGGCTCTGTACAACACTAGATGATCTACAGGGCTGCTGGAATTATGCACGATTGTCTATTCTATAT  
TGTTACCCCAATTATCTTGTGCGTAATAATGGTTGATACTTGTGTCTGTGGGGAAATATGTTATGCC  
GGTCTACAATTGCACATCATTGTAACGAAGGCGGAAAACATAAAGATGTAGAAGCGTGGGGAAGGGC  
TAAAGGAAGGAGGCTCAAGTGAAATTAATGTGCGATGGGGGTCCCTGCCCGGCTTTCCCGGGGGCCA  
35 AGACCTACCCCGGCCAAGGTGGTTTTAACGAAAGNGGAACATCGGGGCGAGGAGAGGCGGCGTTTTG  
CTCCTTTTCGCCTCTTTTGGTTTCTTTTGTTAAATTAATAAAGTATTGTTGGAAAAAA

>'990820A-039.scf' came from CONTIG 37 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
039.scf"(60>580)

40 GCACGAGGACCCAGGGCCTGATGGGAAACAAGGGTGGAACCGGGGGGTGGTTGGGCGGCTCCAGGG  
CACTGTTGGGCCCATTAATGGGTCTTAGCGGGACTCCCCAGGGAGAGAGGGGTGCGGGCTGGGCATT  
CCTGGAAGGCAAGGGGAGAAAAAGGGTGAAAACCTGGGCTCAGAGGGTGACATTTGGGAGCCCCGTT  
AGAGAAGGTGGCTCGTGGGGGCTTCTGGTGCTATTGTGGGCTCCTTGGCCCCCTGCTGGAGCCAAAGG  
GGGACCGGCGGTGAAAACCTGTCCCGCTGGCCCTGCTGGCCCCCTGCTGGTCTCGGGGTAGCCCCCTGG  
45 GAACGGTGGGGAGGCCGGGCCCCGCTGGCCCCAACGAATTTGTGGTNCCGGTGGGCTGGTGGTCACCT  
GTGCTAAAGAAAAAAGAACCAAGACCAAGGGGAAATGGCCTGTGGCCCCCAGCCCCGGGGACCG  
GCGGCCGCTGCCAAAGCCCCCTGGCCTGCGGAAGCGGGGAGGAGGGCCC

>'990820A-040.scf' came from CONTIG 38 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
040.scf"(55>520)

50 GGACAAAATCTACTTCATGGCTGGGGCCAGCAGGAAAGAGGCCGAATCTTCTCCCTTTGTTGAGCGAC  
TTCTGAAAAAGGGCTATGAAGTGATTTATCTCACAGAACCTGTGGACGAATACTGCATTACAGGCTCTTT  
CCGTTTCGACGGGAAGAGGTTCCAGAATGTTGCCAAAGAAGGAGTGAAGTTGATGAAAGTGAGAAAA  
GGAGGAGAGGCGCGAAAGCAGTGAGAAAGAAATTGGGCCTCTGCTAAATGGATGAAAGATAAAGCC  
55 CTCAGGACAAGACGGGAAGGCTGGGGGGCTGACCGCCTGACAGAAGCTCGGGGGCTGGAGCCGCCG

NCGGGGGGTGGGCACTGAGAGGTCAGAAAGCCAGCTCCCGCAGCANGCCTCTCACCATTTTTTGC GGC  
CAAGAAAATTGAATTACCCACCCCCCTATCGGCCGCCGGGGGAAGAGAGAAAGACAAAG

>'990820A-041.scf' came from CONTIG 39 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
041.scf"(60>514)

GCACGAGGATTTAGTGAGATTTATGCTCTTTAAATTACATCCGTAGATACAATGTTTATCACTCTAAAA  
TCATTATATAGTTTATAATCATCTATGTATCTAGAAAAAATGATTTATTAAGTGTAGGATGAAAGACC  
ATTTGGCAGTTTCCCAGACTTTTGGACTTTATCAGATTATAAAATAAACTATTACTGCTTACATAATGGG  
GGCTTAGTGTTTGCTGTTTTGAGGTCTCATTTCTAAATTTTTCCCCTTCTATAATGGATTATTTAAAGGA  
TATTATATAAATTGGATATTATAAAGGGTTCATACTAGGCTGAAAAGATCTAGGCAAAATTTAAATA  
TCTTTTGTGAGAACTATAATAGTATTATTGTTTTTCACAAAACACTCCATGACTCCTCCTCTTCAAT  
TATAATTTAAACCCCCAAAACCCAGACCTTGGCTTGGGGN

>'990820A-046.scf' came from CONTIG 40 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
046.scf"(55>533)

TTAAAAAAGGAAGGAAGGAAGGAAGGAGACAGGAAGGAAGTATTGAAAAAGGATAAAGA  
GCAGAAAGGAAGGAGGAACAGAAGGAAAAAGCAAGGAATAAATAAATCACAGTTACTTGAAATTC  
ATAATCAGAAGAAATGAATTATATCTCCAGCATATGTTGTATAACTCTATGCTAATAAATTTGTAGATC  
TATTAGAAAATGTGTGATTAATAAATGATACAAGAAAATACAGAAGATTGGCGTTACTATGAAAGAA  
ATGAAATATTGTTTAGTTTTCTTGAAAGAGGGTGGGGGCCGCTGATTTTTTAGGGAATTCTTTATGCT  
TTCTGAACAGATAGCCTGGTTAATTAATACTTAGATATAAGAAAAAGAAATTGTAGGTATTTTGGGA  
GGCACTTACATGATTAAAACTAAGAACCCCAAGGCTGACCATTAGACAATTTGGGAATCTAATTTAAA  
TTCAACC

>'990820A-049.scf' came from CONTIG 41 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
049.scf"(60>510)

GCACGAGGGCGAATCGCAGAGCTCTGCACCTCGTGTTCAAAGGGGAAACCGCTTCGAGACGGCGTGTT  
TCTATCGCGATGTCCTGGGGATGAAGATTCTTCGGCATGAGGAATTCCAGGACGGCTGCAAAGCTGCC  
TGTAATGGGCCTTATGATGGGAAGTGGAGTAAACAATGGTGGGGTATGGACCTGAGGATGATCACTT  
TGTCACAGAGCTGACTTACAATTACGGCATGGCAGCTACCAGCTTGGCATGACTTCCTGGTATCACGG  
NGGCTCCAGGCAGCTGGCAGCACGCTAGAAGCTGAGGGGCGCTCAGGAATGGAGATGGGGGGTTGGA  
CCAAGCCCCTGAGATTTTAGTTTTGCGGACGGGCCCCCTACCAACCGATAAAGAACTTGCGGGGCGA  
CTCAAAGCCTGACACGGCCTACTACGGGAGAAATTTGAGAGTGG

>'990820A-052.scf' came from CONTIG 42 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
052.scf"(57>345)

GCACGAGGGGCGAGGCTATAGGTCCATGGTAATGCTCAAGAAATGTCATGACATTGACTTTCATTAGA  
CAAAAAACAGCAAGCATTTTTAAACCCTGGTTGGGCCGTTTTATTTTTCTTGTGAATTTAAAACTTTT  
TAAACTTTTTTTAAGGGGGGGATGAGAGGGGGACCGGGGGGGTTTTTTTTTGGCTTTTGGTTTTAAC  
CAGGGGACTTCGGGCCCAAAAAACATAAATACATTGGGGCACAAGGAGAATAAGGGAATAAACA  
TAAACCTTGGGGCAAG

>'990820A-053.scf' came from CONTIG 43 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
053.scf"(60>202)

GCACGAGGATAATATCGTAGGTTTATAAAACCTATTTATAACACTTTTACATATATGTACATAGTATT  
GTTTGCTTTACGTGTTGACCATAAGCCTTGGGTTGAACCTTAAAGGAGCTAAGGAACTGGAAATCTTA  
ACTTAT

>'990820A-054.scf' came from CONTIG 44 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
054.scf"(60>298)

GCACGAGGCCCCCGCCCATGGCTAGCCTCCTGCTCCTGCTTCTCTGCCTTGGTTGGGTGTCTACCTTCC  
AGGGGCCCCATGGCTGCAGACGTGGGAACTGGCTCTTCTGAGCTCAAGTGTGCAGCGCACATCGCGGGA  
CCTGTCCTGTGAGCAGCCTGAGCTGACCGTCTCCTCCCAGAGGCCCCCGCGGGNCACAGAGAAGAAGC  
CCGCCCCCCCCGGGCCGAGAGGCCCAAGGGTTGGA

>'990820A-055.scf' came from CONTIG 45 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-055.scf"(51>514)

TGGTTTTTTTGGAAAACCAAACATGCTTTATTTTCATTTTTTTTCACAATTTATTTAAACATCTCACATATA  
CAAAATAGGTACAATTTAATTTTCTGCTTGTCGAGAAACAAGACTTCTTTGGAACCATGGGAGAGG  
5 ATGAAAATGAGACTGGCAAAGAACAATGCTGAATTTAAAGAAGAGGACAATGTTGGGCAAATGATC  
CACTTACTTTGGGGGAATAAGAGGAAAGGACTGATGTAAAGACAATGAAAAAAAAAACAAACAGC  
TCACAGCGNGGAGGATCTTTCTCAATTCCTAGCACATCAACATTCTCAGAATCTGAAAACCTGGTATTA  
GCACCTGGATTGACAAAAACAATAACCACTCTCCTGTCAGACTGCGGGGGACAACACGAAGGGTT  
TGGGGAGTTAACTTGGAGTGGGTTAACTCCCTCGGGAGAATTAAGCCCCGGGGGCA

>'990820A-056.scf' came from CONTIG 46 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-056.scf"(54>506)

TGAGAGCCCCACAAGGACCACAGTGGAAAGATCCTGGCAGAAAGGAGAGTGCCACCCAGCACCCATCCC  
TCACCTTCCATATTCCTTTCTCAACACCTGCTAGGGCCTGGCAAAAGAGCTTTTCCAGAAGACTTAGG  
15 GGAAACCAAACCTGATATTTTTTTTGGCCAAGTCATACATCTTGCAGGATCTCATTCCCCAACAGGGA  
CTGAATCCAGCCCACAACAATAAAGCGCTGAATCCTACCCACTAGACCACCAGGGAAATTTCCAAAC  
TGATACCTAGAAGGGGGNGGGTATTATGGAGTTTAGGCTTCTGCGCTAAAACACCNCAACCTGCTAC  
TGTATGGGAAAGGNAGGGACCACACAGGAGAAGAACCACCTCAGCCCTGGAATGGGAAGAAAAATT  
ACATGTCAGTTTGGGCGGAAATCAGGCCAAAAGAAAGAGACCCTC

>'990820A-057.scf' came from CONTIG 47 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-057.scf"(54>504)

GCAAGATGATGACTTCTTGGCCACCTTGAAAGAGCTGGAAGCAACCCTCCGGACCCAGAGCCTCTCTC  
TGGAGTGATTCTGAAGGGAAGATCCTGAACAACACCTACTACCAAGAATGCCTCTTCTACCTGCACA  
25 GCTACAGCAGGCCGCCAAGAGCAGCGGGGACGCAGGGGTGGCAGACATCTGCTCCCAGTGGCTGCTG  
ACAAGCCGACGCCGGGGTGGCCATGGTTTCGGCCTCCAGCAGTGACCCTGGCTGCAGGCCAGACAGCG  
NGGGGCAGGAGGATGGCGCCTTTCAGCTTTCTCCGGGGGCAGGACTTCTGGCTACCCAGGTGG  
AAGGCGGGAAGNACCCACCTGCATCTGAGCAGATGGACTTCCGCAGGCCAGTTTGAAAAGTGAGGCG  
GGGGGGGTGGCGGGAGCCGCCTTTACCAGAGGAGGGGGGGGAAGCC

>'990820A-058.scf' came from CONTIG 48 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-058.scf"(54>525)

CTTTTCCAAACACGGGAGCCAGGATCATGCTGTTCACTGGGGGACCCCCACCCAGGGAACCTGGCAT  
GGGGGGTGGTAGATGAATTAAAGGTTCTATTTCGTTCTGTCATGACATTGAGAAAGACAATGCCCCG  
35 TTCATGAAAAAGGCAACCAAGCACTATGAGATGCTTGCGAACCCTGCTGCAAACGGTCACTGCAT  
TGATATTTACGCCTGTGCCCTTGATCAGACTGGACTCCTGGAGATGAAGAGTTGTCCAATCGTACTGGA  
GGGTACATGGGGAGGGAGATTCTTTCAACACTTCTCTCTCAGCAGACATTCAAAGATTTTAGTAAGA  
TTTATGGAATTCCGATGGGCTTTGTGTACTTGAAGAAAGACCAGGGGCGGAGGGCGGGAGCATGACCT  
GGGGGTTTAAAGGAGGACGGGGGGCAAAAAGACTGGGGCGGGCAGGGCAAGGAAAATGGGCG

>'990820A-059.scf' came from CONTIG 49 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-059.scf"(54>533)

CAGCAGCAGCAGCAGCAGCAGCAGCAGCCTCGGGGGGGGGCGGCAGCAGCAGCAGCGGGCGGGCGGC  
CCGCGCGGGTGTATGTGGGGTCGCGGGGTCTCCTGGCAGCATGGCGGACTACCTGATCAGCGGCGG  
45 CACCGGTTACGTGCCCCAGGATGGGCTCACTGCGCAGCAGCTGTTCCGCAACGCCGACGTCCTCACCT  
ACAACGACTTCTGATTCTCCAGGATTTATAGACTTCACAGCTGATGAAGTGGGATCTGACTTCAGCC  
CTGACTCGAAGATCACACTAAAGACGCCATCATCTCATCCCCATGGACACTGNGACGGAGGTGACAT  
GGCCTTGATGGCTTGATGGCGGTATGGGTTTCATCACACACTGACTCAGAATTCAGCCATGAGGGCGA  
AGGAAGAAAATGACAGGCTCATCAGGCCCGGGGGCTAACCCGCTACGGGGGAGGGCGAGGCAAAAC  
50 CGGCGGA

>'990820A-060.scf' came from CONTIG 50 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-060.scf"(60>529)

GCACGAGGATCAATGGAACAGATGGAGACACTTTTCACCCGCTAATCACCAAAGATGAAGTCCTTTA  
55 TGTCTTCCCATCTGATTTTTGCAAGTCAGTGTATATAACTTTCAGTGACTTTGAGAGTGGCCAGGGACT  
GCCTGCCTTGAGGTATAAGGGGCCTGCAGAAATATTAGCCAATACCTCAGACAACGCTGGCTTCTGTA

TACCTAAAGGAACTGCCTGGGGTCAGGAGGTTTGAATGTCAGCGGCTGGAAGAATGGCGCACCTAT  
ATCATGCCTTCCCACACTTCTACCAGGCAGATGAAAAGTTGGCTCTGGCCTGGAGGCATGCATCCAAT  
AGGGATATCATGGGAGCTTGGGGCATCAACCCCTGCTGGATATCCTAGAGCAGCAGAGGTCCAATAAT  
GGTATGTAGAAAATAATGACTCATGAACAGAAAATTCAACCCGGTTCCCAGGGGGAATAAAG

>'990820A-061.scf' came from CONTIG 51 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
061.scf"(54>521)

TCGGAGTTTGCCACTTATCGGGCATCCTTGGTGTCCGCAGCACTCTCTCCCTCTCTCTAGGGCGGCGAC  
CTCCGGCGGCCGAAAAGTCACCATGTCCATCCTGAAGGTCCACGCCAGAGAGATCTTTGACTCTCGTG  
GGAATCCCACCGTTGAGGTTGATCTCTTACCCGCGAAAGGGCTCTTCAGAGCTGCTGGGCCAGTGGC  
GCCNCAACTGGAATCTATGAAGGCCTGGAGCTCCGGGACAATGATAAGACGCGCTACATGGGGGAAG  
GGGGCTCAAGGCTGGTGAGCACATCAATAAACTATGGCGCCGCCCTGTTAGCAGAAGCTGACGCGG  
GGAGAGAAAGAACGACAGCGAGATAAGAGGAAGGACAAAAAGGCAGTTGGGCGACGCCTCGGGGG  
GGCTGCTGGTGCAGGTGGCGGGGGAGGGGGCCCCCACCCCCACGCCCGGGGGGAGGGGGGAAN

>'990820A-025.scf' came from CONTIG 52 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
025.scf"(60>249)

GCACGAGGGTTGGGGTCCGGGCCCCCTCGCTTCTACCCCTGACCAAAACCGAAGTCTGACGTGTTGGGG  
TCCGGCCCCCTCGCTTTTACCAAGACCAAACTGAAGTTCTGACGTGTTGGGGGCCGGACCCTCTCTC  
TACCCACACTAAAACCGAAGTTCGACGTTTATAGGGGGCCACTGGGCCCGAATC

>'990820A-066.scf' came from CONTIG 53 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
066.scf"(55>526)

GCCTAATTTTCAAAAAGAAAAACCATAAAGTTAGCTGAATAGTTTCTTTATTTACACATTGAATCACAAC  
TGTCCACTTAGAAGATTTTGTAAAAAAAATTGTTTATGTGTCTTTACACTAAAACAGAACTTAAAAG  
ATGAATTTTATGGCTCATGTAACCTACAAGGTTGAGAGCAGTTATAATTTTACTGGCCTAGCGCCATT  
AAAAAGTATTTAAGATTATAGTAGGAAGTATGTAATTATTATTATTTACCTTAAACGATGGATGA  
ACCATCACACATTTTCAGCCATTAAAAGGAAAAATAGAGCATCATACATGATTTCAGAGACAAGCAGCGT  
ATCACTATTAGACTAATAGAATTTTGTATATTTCCACTTCTGTTTTTCAGCGGACAAAGAAAACAGTGG  
CCGCTGCTTGATTAATAACCCCAAACCTTTGCTTTTAGGCGAAATAAACGAATCCAACCA

>'990820A-073.scf' came from CONTIG 54 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
073.scf"(60>537)

GCACGAGGCTCATGCCTGTGCTGCTGCAGGGCCAGGCCCGACTGGTGGAAGAGTGTCTATGGGCGCCG  
GGGCAAAGCTGCTGGCCTGCGATGGCAATGAAATTGACACCATGTTTGTGGACCGACGAGGGACAGC  
TGAGCCCCAGGCACAGAAAGCTGGTGATCTGCTGTGAGGGGAACGCNAGCTCTATGAGGGGGGCTGCG  
CCTCCACACCTCTGGAAGCTGATATTCAGTCTGGGGCTGAATCATCCAGGCTTTGCTGGAAGCACGG  
GGNGGCCGTTCCACAGAAATGAAGCCCACAGCATGGATGTGGTGGGCCCAGTTGCCATTACCGCTGG  
GCTTTAAGCCGAGAAATTTATCCTTTTCTGGCCATGGGGGGTACGGTTCGCGGCCGCTGTCTACCGG  
CTTATGCCGGACCTGGTGCTTCTTTGTGACCGGGCCCTGCATGAAGAATCCAAAAGTGGGGGCTGGGC  
CCGN

>'990820A-064.scf' came from CONTIG 55 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
064.scf"(60>465)

GCACGAGGTTACAATGCCAGCTTGGGAAAAACAGAGAGTGTTTCTTCTAAAGGCGATCTGACGAACT  
CAAAGGTCTAGAGAAGGAGGTGTCCCGCAGCCCCACCACCAGCAGCATCACCAGCGGCTACTTTTCC  
CACAGTGCTCCAACGCCACCCTGTCCGACATGGTGGTCCCTTCCAGTGACAGCTCAGATCAGTTGGC  
CCTTCCAACGAAGACACAGATTCCAGCGAGCATCCGGACCGTCCCTTGGGCAGATTTTCAGACCATCTT  
CAAACAAGAGTTGACAGAACTAGAAAGAGCTTGGGAAAGGATAGATGACCGGGTGCCACTCAGAAAA  
AGGCCTTACCAAGGGGCCCTTGCCCCCAGTTCCGGGAAAACTCAAACCTCTGTGGACGCTGGTTAGA

>'990820A-063.scf' came from CONTIG 56 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-  
063.scf"(54>534)

CTTTGTCAATTGTACCTCCATAAACTGGGAGGAAATGAACAATAAACAGTAAAAGAGTCAGTGT  
TTGTTTTTAAAGAACAGGGAATCTCAGTGCTACTCTTACACTGTTTCAGAGAAACAGGAAAAATAAGGA  
ATACTTTTCATTGTTTTATGAAGCAAGGTAACTAGCGCCGAACCTGATGTAAAGATTACTAAAAA











090820A-067.scf

GGCCGGGGGATCCCGGGATTGACTGCTGTGGTTCAAAGAGATTTGCCTCCCCTGAAGCAGGGTAGAGC  
TTTATGCCGAAAAGGAAGCCCCAGAGGCCTGGGGCCCTTGGCCAGCCGGGTTCGCGTTCCAACCTCCA  
GGGGCCCCGCGGGCGGGGCCCCGCTTGGGGCCGGGGCCTAGGGGAGGGGGCCAAGCGGGAGGCGGGGGC  
GGAAAACCGGGCAAGGCCAACCCGAATGGGGGGCCCCGAACCCCGGGGCCCCGTACC

>'990820A-085.scf' came from CONTIG 80 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-085.scf"(54>520)

GTTGAGAGGAGCGTGGCCTTCTCCTCTCCCGCCATGGCGTGTGCTCGTCCACTGATATCAGTGTACTCC  
GAAAGGGGGAGTCTCTGGCAAAAATGTCACCTTGCCTGCTGTGTTCAAGGCTCCCATTCGACCCGAT  
ATTGTAACTTTGTTACACCAACTTGCACAAAAACAACAGACAGCCCCTAGCTGTCAAGTGAATAAGC  
AGGCCATCAAACCAAGTGTGAGTCTTGGGGGACCGGCGAGCTGTGGCTCGATTCCCAGGGTTCGGGGG  
GGGGGGACCACCGTCCCGCCCCGGGGGCTTTGAAACAGGGGGGGGGGCGGATGTTGGGCCACTAAAC  
CTGCGCGGTGCCCCGAAAGGAAACCAACCAACCCCTCCGCTTCTGCTGCCACCCCTCCCCCCC  
GGCAGGCAAAGGAAAGAAAAAGAAAACCCGACCCCTTGGGGGGGGAAAAGGAGGCCCCCC

>'990820A-067.scf' came from CONTIG 81 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-067.scf"(54>455)

GTCAAATTGTGTCTCCATCACTGTTTCCCTGAGGTTTGATGGTGGCCTGAATGTGGATCTGACAGAGT  
TCCAGACCAACCTGGTGCCCTATCCCCGCATCCACTTCCCTCTGGCCACATACGCCCCCTGTCATCTCTG  
CTGAGAAAGCCTACCATGAACAGCTTTCTGTAGCAGAGATCAACCAATGCTTGCTTTGAGCCAGCCAAC  
CAGATGGGGAAATGTGACCCCTCGCCATGGGAAATACATGGCCTGCTGCCTGTTGGACCGGGGGGATGG  
GGTTCCCAAAGATGGCAATGCTGCCATTGCCACCATCAAGACCACCCACCATCCAATTTGGGGACCGG  
GCCACGGCTTAAGGGTGGATTACTCCACCTCCCCTGGGACCGGGGGGAACGGCAAGGACA

>'990820A-068.scf' came from CONTIG 82 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-068.scf"(58>322)

AGTGGCGAGGTGCGTCCTTGTGTGCCTGGCCTCTTGTGCTGCTGCCTTACGGGGTGTGTGCGCCAGTA  
GACCGCGGGAACAAGGCTCGGTCCCCTAGCCACCGCCGCTACTCTTGGTCTTTACAGATCACCGGC  
CTGGACTTCCGTGGGTGCGCAGAGGCTGCCATGTACCGGGTTTAGGATCACCCCTCACAGCCGCAT  
CGCGATGAGCCTGGAGAAGGGGGGGTGCTGACGCTGACCAGAGGCGCGAAAGATAAAGAG

>'990820A-095.scf' came from CONTIG 83 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-095.scf"(1>528)

TGTTCTCTCATCCGGGTGTGTGTCGGGGCTGCTTCTAGTTTCGTTGTTGGCATCCCGCCTCGGTTTCGTG  
CTACTGATGAGGGCGTGTGACGCCACCTGTGTATCCACTGGCGTCTGTTCGGCTCCTTTGTGCCCTA  
CTTGCTTTCTCTGCCCCGACTGGGTGGCGGGTCCCCCTGGGTGGCCTGGAATACGTGCTTTTCTTTTGG  
GGGTTTGCACTCTCGGCTCTAACACGCTTTGCAACTATTTCTTCTCATTCCTATAGTCCTTCACTCAT  
GGCTTGGTTTCTTTTGCATGTCCAACAGCCAACCCCGCCCCCACGTCCCCCTCCACTCTCCCTCCTTCC  
ACACATAATATAATAAACATTGTAACACAAATTGTAAGTGAAAGTCTCACTGTTCTATTAATGTTGCG  
TGCTTTTCTCTAACCTCTTATCCTTGCTTGCTCATTTTGGCTTCTCTTATTCTTCTCAATCAATTCA  
CATAAATATCTTATTTATGTTGTTGTTCTCTTGCCTTC

>'990820A-091.scf' came from CONTIG 84 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-091.scf"(56>478)

GCTCTGAGTGGTTTCTGTTGCCAGGGCTCTAAGACCCCTCACATTCTGCAGACCTCCAACTGCCCG  
GGGCTTGCTGCTGCCTGCCTGCCACTGAGGGTTCCCAGCACCATGAGGGCCTGGATCTTCTTTC  
TCCTTTGCTGCGCGGAGGGCCTTGGCAGCCCCTCAACAGGAAGCCTTGCTGATGAGACAGAAAGG  
GAGGAAGAAACCGGGGGCGAGGGGGCCGGGGACCCGGGGGAGCCACCCCGCCGGGGGAAGTAGG  
GAAATCGGGGGTGGGGGCCGGGAAACCGGGAGGAGGGGGGGCGGACCCCGCCAACCAAGCA  
AAACGGGAGGGGGGAAGGGAGAAACAAACCCCTGGGGGGCCCCGCCCCCCCCTGCCTGCCCTGGGG  
AGTGGAAGGGGCACACAA

>'990820A-083.scf' came from CONTIG 85 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-083.scf"(58>513)

GGGCACGAGGCCAGCAGGGCCCTAGCCTTGCCCTGCCGTCTCCCATCACTCTAGCCACCTGTATC  
AAGGGCCGGGAGGGGGCCGCCCTGCTGCCACCCACAGCATGAGGTTCTGAGCCACACCCCTCCCCACA

09876543210  
9876543210  
876543210  
76543210  
6543210  
543210  
43210  
3210  
210  
10  
0

GACAGCCGCTCCGACCGCTGGTCCCAGATGCCAGCAAGCAGGGGGTGAAGGAGGACACAGAGGACGG  
GCGGCCGAGGCCCGGGACAGCCCAGCCCCGGTCTTTTCGCATCCCTGCCACCTCAAAGCACCGGGGT  
TATGCAAGACCCGGATGAGAGGCACCGAGAAACAGCCCGGGGCCAGGACGAAGCCCCACCCCAACC  
CAACAAACCAGAACCCGGGCTGGGGAAAAATGAATTGGAAAGGGGGGAAACACAAGAAGGGGGGGGG  
CCCCCAGGGCCCCGGCCTCCCCCGGCCGGGGGGGCCGGGACCCATGGCCCTT

>'990820A-089.scf' came from CONTIG 86 at offset 0;"E:\SEQUENCE\export\EG\_DB\990820a\990820A-089.scf"(46>647)

CGCTTGCAGGGCAGGCAGCGGGAGCGCACGGGAATGTTTGTGCCTGCCGTTGGCTGCGTTACCTTCAG  
GGCGGCCGGGCGCGAGAACCCTGGACCCATGGGAAACCCTCACAGGCTTCCGTTGGGGCCCCCTTTTGC  
AGCTTGGCGCTTTTTTGGCCCCCTAACGCTTTTCAAACGGGAGGGTTACGGTTATTGGGCAAAATTTGGGT  
TGGGAGAAAGATTTTTTTTAATTTGGTTGCCTTTCTGAACAACTTTGAATAAAGTGGAAGGGGGTTTCT  
CAAAATTCAAACCACGGGAACAAGGCCCCCAAAATGTTTCCAAAATTTAAACAACCAAAAAACAATGG  
ATTTGGGTGGTAGGGGGGTTTTATGGGGGAATTTGGCTTTCCCTTGCCCCAAAATTTTTTGAAGCA  
AGAACTAAAAAAGTGCCACGCTTTCCACACATAAGGGCCTGACCCCGGGGGGCATTTGGTGGGTGT  
TTGCCCAATTCCTGGCCTCCTGGCCTTTTCTTTTTTTTGTTCATATTTGGGGGGGTTTGGGATAAG  
GAGGGGCCGTTTCCCGTTTGCCCCGTGGGCCCCCCCAAAAATTTAGACTTTT

>'990913a2-001.scf' came from CONTIG 1 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-001.scf"(57>62)  
TTAGGG

>'990913a2-002.scf' came from CONTIG 2 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-002.scf"(13>49)  
GTCTGAATAGGGATCCCCGGCTGCTTTTTNGTTGA

>'990913a2-004.scf' came from CONTIG 3 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-004.scf"(51>218)  
CTTTTTCGGCTGGAGCGGGGCCCGTGCGGGATCGTGCTGGGGGTGAGGGGCGAGAGGGTGCGG  
GGGTGGGTGCGCGGATTGGCTGGGAGGGAGGATGCCCGACGAACGGTGGCCGCTTGCGGGGGCCCAT  
TTTATGTGTAAGGGGGGTAGAAAGGGATGGGCG

>'990913a2-005.scf' came from CONTIG 4 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-005.scf"(51>356)  
CCAAAATCTACAGCCGCTCACTGTTACCTGTCCTGCGTTCAGGACGTGTTAAGGCCGTTGCACATATTA  
CTGGTGGAGGATTACTGGAAAACATCCCCAGAGTCCCTCAGAAATTGGGGGTGAATTTAGATGCC  
CAGACCTGGAGGGTCCCCAGGATCTTCTCATGGTTACAGCAGGAAGGCCACCTCTCTGAAGAGGAGAT  
GGCCAGAACATTTAACTGTGGGATTTGGGGCTGCCCTCGGGGTATCAGAGGACCCGGNGAAGCAGACT  
CTGCGGATATTGAGCAGCACCAGAAGAAGCCGCG

>'990913a2-007.scf' came from CONTIG 5 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-007.scf"(57>326)  
GCACGAGGCACGTGTGATTGTGTCTCCACACATCCGTGCATGTTCCCTGCCTTCCCCTCCGCTCCCTGC  
CCGCTGCCCTCTGGCCCTTACCATGGGCGGGCCCTGCAGTGTGGTCTGTTGCCAGGAGGCGAGCG  
CAGGGACTGAGCTAGAGGATACAGGAGCCTGGGCTCCCAAATGCCAAAACCTCACACATATTCTCG  
CTGAAGGGCCGTAGCCTGCCTCACCACCATTTACACCCCTCACCTGGGACCTGGGCTCTTTTTTTT

>'990913a2-008.scf' came from CONTIG 6 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-008.scf"(49>556)  
TGTTAGCTTAAAAGATGGCGGGTTCGCTGTTTGCCGGGCAGCTGGCGCCGGGAGCGAGTGCTGCTAC  
GCACCCGCCGCTCGCCGGCCCTGCTGAGTCGGCTGACTGGGGGGCACCGCCACCTACGCCAGGCTCT  
CCACAGCGAGCCAGAGACGCAAGTCAGCCAGCTGGACAACGGGCTGCGAGTGGCCTCGGAGCAGTCT  
TCCCAGCTACCTGCACGGTGGGGGTATGGATTGATGCTGGCAGCCGNTACGAGAGTGAGAAGAACA  
AGGGGGCTGCTACTTTGGGAGCATCTGCTTCAAGGAACAAACATCGCCTGGCATGCTTGAGAGGAG  
GTGAGAGCATGGGGCCATCTATGCCTACACACCGGAGCCACGCTTATAATAAGAGTATCAAGACTGCA

AAGTGAGAGTCTGCCGCACTGCAGATCANCTCAGACTCCAATGAGAGAGCGGAGGATCTGAGAGTGA  
GAATACCATCTGCGACGTCTTATACTGTTGCCGCT

>'990913a2-009.scf' came from CONTIG 7 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
009.scf"(51>340)

TTGTTCCAAGATTATTTTCAGAGCAAATCTGAAGGAGGACCACTGACAAGCCCCAAAATATTTAATATAC  
CTGATGAAATGGCCAATCAATATATGAGAGGGCCATCAATGTAACTCCCTCAAATTAACACGCT  
TAGCTATCACCTACACATTAGCTATCACCTATGTCACACTGTACTTAAGCTTACTCCCAAGTGGAAGCT  
ATTTTTATATTTTAGANTCAGTCGCTCAGTCATGTGTGACTCTGCGACCCAGGACTGCAGNACTACAG  
GCTTTCCTGTCCATCA

>'990913a2-010.scf' came from CONTIG 8 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
010.scf"(47>342)

GGTTTTTTCACCACATCAATGGGGTAACGGTTTTTCCAGCCACACGCTGCATGACAGGCCACCGGCC  
ATTTTTTCAGTTGCTGAATAAACGCGCCGGGAATACGACGGCTACCCACCACAAGCACGCTGCCGCCAC  
CTTTCAGGGATGAACGCTGCCCCCTTTTACGACGCCTGCGGCGCGAAAGGACAACCCGCGCATTACCC  
AGCTTGATTACGGGCAAATCCCCCGGTTAACTTTGATTCTGGCCTGCGGATTTTTGACCGTGGGCCTT  
TTCAGCCTGGCCCTTCTTTACC

>'990913a2-011.scf' came from CONTIG 9 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
011.scf"(62>109)

AAGCAACGGCACGGCCAAGGGCATCAGCTGCCACTTCTGGGGACGTGG

>'990913a2-014.scf' came from CONTIG 10 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
014.scf"(52>227)

TGGCACGAGGCAGAGGCTCCAGGAGGCCCTGCAGGTGGAGGTGAAAGCTGGGAGGACGAGGAGGCC  
GTGCGCCTCGCCCAGACCAGACTGGTAGAGGAGGAGGAGGAGAAGCTGAAGCAGCTGTTGCAGCTGA  
AGGAAGGAACAGAGAGGCGCTTACATCGAAACGGGCACAGGCA

>'990913a2-015.scf' came from CONTIG 11 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
015.scf"(56>572)

GCACGAGGCACAAAATAGCCCTTCTCCCTATGGAGAACCAAGCAGTTTCCATAACAGAGCCACTTTGCT  
TGGATGTATTCTCGAAGGACTCAAGCAAGCGTACACTAAGACTTTAACTATGCTAAGTTGACTGACA  
TATAACAGGGAGAGAAAGGAACTCCTGATAAACCTCTAGTATAGACTACGGGAGGCTCTCTGCAAGTT  
TACTGACATTGATTCTAAAAGGGCAGACAGAGAAATTTTCTTAAAAGATAGATTCTCTACTCAGACAG  
CTCCAAATATCTGCCATAAGATACAAAACAGGCATTGGACCAATCAGACTTTAGAAAAGTGTGCAGCT  
GGTCAGTGGTGTATATTGTAGAGATATGAGAGAAAATAGANGCATAAAGAACCAGCAAGACTGAGCC  
CACTGGCTTAGATTGCTTGAACAAGTGGAAAAGCCAGGNAACGGNGAAAGGATGAGCTGTTTTGGGA  
AGAGGATGTAGTGGAGCTTAGCTCTACTACCCGCCCTGTAGCT

>'990913a2-017.scf' came from CONTIG 12 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
017.scf"(49>312)

TATTTGGCACGAGGGTCCCTCATTCCTACTACTCCTCGCATTCTCTATATTTGAAGGTGGGGGAGGGAC  
AAGGTGGACCGCGGTCCCTCCCTTTGCAAGGGAACTAAGCCATGCCGGGGGCTTGAGTAGATCTATC  
CATTTTCTCTTTTCACTTTGTAGGAGTTTGTCAATTTTGGAGCCATCAACTTCATTCAACAATTATC  
AACATAAAGCCCGCCCATGGGACAACACCCAACCCCTGTTCGGTGATCCGCGTG

>'990913a2-016.scf' came from CONTIG 12 at offset 6;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
016.scf"(55>576)

GCACGAGGCTCCCTCATTCCTACTACTCCTCGCATCCTCTATAGTTGAAGCTGGGGACAGGAACAGGC  
TGAACCGCGTTCCTCCCTTAGCAGGCAACCTAGCCCATGCAGGAGCTTCAGTAGATCTAACCATTTTC  
TCTTTACACTTAGCAGGAGTTTCTCAATTNTAGGAGCCATCAACTTCATTACAACAATTATCAACATA  
AAGCCCCCGCAATGTCACACTACCAAACCCCTCTGTTTCGTATGATTCCGTCATAATTACNGCCGCAC  
TACTACTACTCTCGCTCCCTGTNTTAGCAGCCGGCGTCACAATGCTATTACAGACCGGAACCTAATAC  
ACCTTCTCGACCGGCAGAGGNAGAGACCTTTTTATTAACTATCTGTTTCTTGGCACCGCAGTCTTA

TTTTATCTACTGNGTGGGATAATTTCTTNGTGACCACTATAGAAAAAGAACATCGATTATGGGATGT  
GGGCTTATGTAATCGTTTCTAGTTTGTGACCACCTTTATA

>'990913a2-019.scf' came from CONTIG 13 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
019.scf"(48>315)

CAAAATCGAGAATAATGAGGGAGTTCGGAGGTTTGACGAGATCCTGGAAGCCAGTGATGGGATCATG  
GTGGGGTCGTGGTGGATCTGGGCATTGAGATACCTGCAGAGAAGGTCTTCCTTGCCCCAGAGATGAT  
GATTGGTCGGNGCAACCGAGCTGGGAAGCCCGTCATCTGTGCCACACAAATGCTGGAGAGATGATCA  
AGAAGCCTCGCCCTACCCGGCGGAGGGAGNNGACGGGCCATGCCGGCTTGATGGACCGACTGCTCA

>'990913a2-020.scf' came from CONTIG 14 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
020.scf"(48>580)

CGAGTGGGAGCCCCAGGGCCGCGGTCTGGAAGCGGAACCTGTTCGGATTGTTTTAAGAAAATGGCAGA  
CAAGCCCCGACTTGGGGNGAAATCAACAGCTTCGATAAGGGCCAAGCTGAAGAAGACTGAGACGCAAG  
AGAAGAACACCCTGCCGACCAAAGAGACCATTGAGCAGGAGAAGCAAGCAAAGTGAGATTTCGCCG  
AACCTGGGGATTCTCCACCGCATCATCTTGGAGACCCTAGCCGNGGTGTGGAGGGAGAGCCACCTGCA  
NGATGTACACGAGCGACAGCTGGACTGTGAACCCGGGCNCTCGTGCCGGCGCACCCGGCCGCGGGGGT  
TGATGGGACCTTCCATCGGACTGCCAATTTCCGGTTGGCTGGATATTATAAATATTTGTTGATAATAA  
AATAACACACCCGGGAAAAAAAAAAAAAAAAAATGGGGGGGGCCGGCCCATTCGCCTTTGGGGGTTTCA  
TCACTGGCGGTTTACGGGATGGGAACCCCGGTCCACTTATGCTTCCCCTCCCTTCCCTT

>'990913a2-021.scf' came from CONTIG 15 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
021.scf"(45>59)

TTTTTTTTTGTACGC

>'990913a2-022.scf' came from CONTIG 16 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
022.scf"(53>59)

GTGACGA

>'990913a2-025.scf' came from CONTIG 17 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
025.scf"(47>348)

TGTTTTTCTTCTTGTGCAGAGATGCTATCACCCACACATCTCCCCACCCTGCCACATGCAGCCTGGA  
ATTCTCCTATGGTTTTCCAGTGGGTCTGTAGTCTGCCAGAGGAGCAGGGGGTGGCCTCAGACAGAAGC  
CATGAAGAAGATCCCCACACAAAGACTTTAAGATCCACAACGCTTACTTGTTTTCATTTATTTGATAG  
AGCCATACAAATCANTATTCCAAAGGATGGGGAACAGCGCAGCTAAGCAGACTTTATTTCCCAGCCTA  
TCATATGCTCGTTGNTTCTGCCTTAGTA

>'990913a2-026.scf' came from CONTIG 18 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
026.scf"(43>597)

CGAGAACCTGCAGGACTTAGTGGGGAAGCCGGTGTTCACAGTGGAGCGCATGTATGACGTGACGCCG  
CCTGGCGTGGTCATGGGGCTGGCCTGGACGGAGCATGGGAAGACTCCACGCTGTTTGTGAGACGTCC  
CTGAGACGGCCGAGGGACAGAGACAGNGACAAGGGGGACAAGGATGGGAGCCTGGAGGGGACCGGC  
CAGCTGGGGGAGGGATGAAAGAGAGCGCCGCATATCCTACACTTCCCCAGGCCCTCCTGATGCAGCAC  
GACTCCGCCAACAGTTCCTGTTGAACTCCCCATCCACTGCACGTGCTGAAGGGCCACCCCAAGACGCC  
CGAGGGCCGCTGACATCTCTCNGNCCTCTCTGCTTTGACGGCAGGCNAGAAACTGCTGACGCGAG  
GCTCTCCAGCAAAGTGCTGTGGCGGTTAGAGAGACACCGCAACGGCGGGACCGCTCCCTCACTAGAC  
AGAGATCTTTACTGTTCTTTCCCAGCCCTGGGGCTGGGGCCTCCCGATTTCTTCTTCGGGAGGGCGG  
GCCGGGGGGGGCG

>'990913a2-028.scf' came from CONTIG 19 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
028.scf"(1>538)

ACGGGGGCGGCGTCTAACTAGNGGTCCCCCGGGCTGCAGGTATTCGGCACGAGGCTGTGCTGGACTGC  
ATTTCCATGGAAGGGTGCATAGTCTGCTCTTTTGTCTGGATTCCCTCATCAAGCTGGTCAGAGTCACG  
AACGTGCGCCCTGTGTGGGTGTGGGCCGACCCCTGTCTTCCCGTCACTGTGTGCCTGTCCCCGCCCACT  
GCCCCAGGTCCTGGAGCTTCTTAGAAGTCTGAATGCCTGGNNGCAGAGCCTTCCGCTGTCTTCTTCAAG  
ATCATCCGCGNGTCTCACCTTTGTTTTTTTTTGTCAATGTTCAAATCATACATCTATTTCTCCCGAGTG

TGTGTGTGGTATTTTATGCNTTGTATTATGTTAGATATTACATATGGGAAGAATGACTCTTGCATATGGA  
AGTAAAGACATAATAAAAAATATACCTGGCAATTTGTGCTACTACAACAAAGGCTGTGCTATTTTAT  
GTTATTTAAAAAAAACATATCAGCATTCAAAAATCTTATATTTAAAAATAAAACT

5 >'990913a2-029.scf' came from CONTIG 20 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
029.scf"(41>144)  
TGGTTTTTATTGTAAACAATGCATTTCATCGACCTTCCAGCCCCATCAAACATTTTCATAATGATGAAATT  
TCGGTTCCTCCTGGGAATCTGCCTAATCCTACAA

10 >'990913a2-031.scf' came from CONTIG 21 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
031.scf"(53>58)  
CAAAGA

15 >'990913a2-032.scf' came from CONTIG 22 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
032.scf"(52>59)  
TTGGACGA

>'990913a2-034.scf' came from CONTIG 23 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
034.scf"(46>624)  
20 GTACGAGGCTAGGCCGTGCAGCTGCTGCCACCGCCGTCTGTCTGCCTGCCCTCCCGTCGGTCCACCCCG  
AGCATGAGCGGCCCTGCGCGTCTACAGCACGTGGGTACCCGGCTCCCGCGAAAATCAAGTACCAGCAGA  
GTGAGGTGACCCGCATCCTGGATGGGAAGCGCATCCAGTACCAGCTAGTGGACATCTCCCAAGACAAC  
GCCCTGCGGGACGAGATGCGAGCCTTGGCCGGGCACCCCAAGGCCACCCACCCAGATTGTCAACG  
25 GAGAGCAGTATTGTGGGGACTATGAGCTCTTCTGTGAGGCTGGGGACATACACACTGANGAGNTCCTG  
ATACTGCCTGAGCAGCCAGACCCTGACTCGTCATACATTCCCTCCCACCATCACCCGGCTGAGGACCT  
GGACCACTCCTGTTTTCTACTGACGGGGCTTCCCTCACCAGACCCTCTCTCCTACTTAGCCCTCTTTCAT  
CACACACATCTCACCACGCTAAATGATTAGACAGCAAGGTGTGCTAGTGGCCTGGTGGCCTCTGCTGT  
GTGGCCTGTGTCATACAGTTTCAAGCGCATCGCG

30 >'990913a2-035.scf' came from CONTIG 24 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
035.scf"(53>562)  
GCACGAGGCCCTTCAAGGCCAGAGTCACAGGTGACGGCCTCGTCAGCAACCACAGCCTCCATGAGA  
CATCATCTGTGTTTGTGGACTCCCTGACCAAGACTGCCACCATCCCCAGCACAGTGCCCCAGGCCCG  
35 GGTCCCCTGATGCCAGCAAGGGGCTGGCCAAAGGCGTGGGGCTGAGCAAGGCCTACATGGACCAGA  
AGAGCAGCTTCACGTTGGACTGCAGCAAAGCAGGCAACAACATGCTGCTGTGGGGCGTGCATGGGCC  
CCCGACGCCCTGTGAGAGATCACTGGGAACACGTGGCAGCAGCTCTCAGAGTGCCTACTGCTCAGGAC  
AGGGGGANACCGCTGTGGNCAGGGGGGGACAGCCATCCGGGCAGCCTCGAGCCTGGGCCTGGTGTGG  
CGCTCCATCACACTCCAGACAGAGGCCCTCGCTGCCCTGCACCACACAGCCCACCCGCAGCCTGCAC  
40 CTCCTACCTGCCTCTGGTGGTACTGCTCANGGCAAGAG

>'990913a2-037.scf' came from CONTIG 25 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
037.scf"(54>628)  
GCACGAGGACCTCTTCTGCCCCCGTCCCTGTGCCCCACCACCTGCTGTCTGGTGCAGCATGTGTTAC  
TTCTGGCTCCCATGCCCTAGATCTGCTGGTGGTAACCTTGGAAGAGCTGGCCAGGCCTGGAGGTTTCCT  
45 TCTCCATTTGTAGTGTTCAGAGTGCCATGATTGCCACGCCCCACCAGAGCTCCACTTGTTCATGCTCGC  
GGCCCATCCACACACCTTTCTTGCCCTCTTGCCCTCCTGCAGGGGGGGGGGGGATGGGAGTGAGACAGCC  
CGGCCCCCTCTTCCCTCTCCTCCCACTGAGCACCAGCTGCTGCTGCCAGNGAAGCTCATGACCGGGGC  
GGNCAGCTTCCCTCCACTGACGAATCATTTACTTAACTAATAAATCACTATTAAGACCAACTAATA  
ATGATGAAGATGGCGAACATTTAACTCGTTTTAGGTTTTGTTTCTAGTGCCGTGTTTTTTTACCTGGTTA  
50 TATATTTTATAATTTACTGTGATGACAAGAATGCTGTTCTTGAGACATTTTGATTTGTTATTNGTTTCT  
TTCTTTCCCTACATCTACCATATC

>'990913a2-038.scf' came from CONTIG 26 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
038.scf"(53>537)  
55 GCACGAGGCAGCGGGCAGCTGGGACCCGCGTGGCATCCTGCCTCCCTGCCCCGGAAGTGACAGTTTA  
CAAAATTATTTTCTGCAAAAAAGAAAAAAGTTACGCTAAAAAAGCCAAAAATACCCACAAA

ACCACATATTCTATTATACAAAAAGTATTCTTTTCTCCACCCGCTTAAAAGGAAAAGAGGAAGAATTA  
 CCCCTTTGCACCGCAATGTTTTGTTTTGCTGGGACATAAGCAAACACCCCAGCCAATGTTATATCCATC  
 CTTTTTTTCGTTTTTTTTTTTCTTTCTTTCTGCCCCCTCTGCTGTNTCCATTCCCCATCTCCTGGCCCCCTTG  
 TGGGGAGTGGGAGGTGGGGCGGGGAAATCTGCCAAAGCCATGTGCTGTGTGTGCTGCCCTGTCTCTGA  
 AATTTTTGTTTAAAAATTTTGATTGTTGTTTTTAGAAAAAAGGACCCGATGAAGAAAGACCC  
 TGACG

>'990913a2-040.scf' came from CONTIG 27 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-040.scf"(54>148)

GCACGAGGGTTTGGGAGAGAGCCAGCTATTCTGGGGGAAAATTTTGAGGGAAAACAACTATTAAAT  
 GGGGTGGATTTAGTTTTTTTTTGTCCCTA

>'990913a2-041.scf' came from CONTIG 28 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-041.scf"(1>634)

CGGGGGGGCCTTAAATATGGTCCCGGCTGCAGAAAATGAAGCTGAACAAAATCTTCATTGCGGAGGT  
 ACTTGCCTCATCCGAGCGAGCCCGCCGACATGCTGAGCAAGAGAGAGACGAGCTGGCGGACGAGATT  
 GCCAATAGCGCCCTCCGCAAGTCTGCACTTCCGGATGAGAAGCGGCGGCCTGGAGGGCTCGATCGCAC  
 AGCTAGAGGAGGAGGTGGGAGGGGAGCAGAGCAACATGGAGCTGCTCAATGACCGCTTCCGCAAGAC  
 CACACTGCAAGGGGACACGCTTGACACTGAGCTGCGGCCGAGCGCAGCGCTGCCCCACAGAGCGTAA  
 TGCAGCGCAGCAGCTGGAGGGGAGAACAAAAGTTGAAGCCAGCTGAGGAGCGGGAGGGCGGCAGTCC  
 AGTTATGGCACCTCTTTGTTTGAAGCAGATGGGGTGGAGGGAGTGTGCAGGAGCAGGAAGACCGGCC  
 ATAATATCGGGTACGGAGAGTGTAGATTTTTGCGTGAGTGAAGCGCTGCGTCATTTAGAAAGGGAGCA  
 TGCAGTGAAGTTAGGGGGTGGGAGGGGAGAGTCAGCCGCTTTGCCACCCGGGACGTGGCTGGCCCCG  
 GCGCGGGCGCCGAAGGGGGGGCGTGTCT

>'990913a2-043.scf' came from CONTIG 29 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-043.scf"(1>368)

CGGGGGCTTAATATGTCCCGCTAGAATGACAGTCCCTGTGATGATAGGTGTTGTTTATGTCCGACTTGT  
 CTGTGCTGATGTTTTTTATTTGATCGGCAGGACAGAGGATTTTGGGGTAGTTCAAGAAAAACAAAAGA  
 AAGGAGGAAGAAAAGTGAGCTCAACGAGCCCGCTCCTTTTAAGAAACATGTTTGCCTGACAGCTGG  
 CCTGCCACGCAACAGATTGCTTTTATAAGATTGCAACAACAAAAGTTTATGTACATTAAATAAATAAA  
 AAATGAAAAACAACAAAATTTGAGTTGTGTATAATAAAGGAGAGAAAAATAATGGTGTTTAGTAA  
 TTTTGTGTTTTGTTTTTTTTTATAATT

>'990913a2-044.scf' came from CONTIG 30 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-044.scf"(46>224)

GCACGAGGCTCCCCCGGCGCCGCTCTGGCCGCACTGCGCTCGCCCTGAGCTCCGGTCTCCTGCTAAG  
 CCAGCGCCGCTGTGCGCTCCCTCCAGTCGCCATCATGATCATCTACCGGGACCCCTATTAGCCATGACG  
 AGATGTTCTCCGACATCTACAAGATCCGGGAGGGGGCGGACG

>'990913a2-065.scf' came from CONTIG 30 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-065.scf"(54>601)

GCACGAGGCCCCCTCCCCCGAGCGCCGCTCTGGCCGCACTGCGCTCGCCCTGAGCTCCGGGCTCCT  
 GCTAAGCCAGCGCCGCTGTGCGCTCCCTCCAGTCGCCATCATGATCATCTACCGGGACCTCATTAGCCA  
 TGACGAGATGTTCTCCGACATCTACAAGATCCGGGAGGTCGCGGACGGGCTGTGTCTGGGGGGGAG  
 GGGAAGATGGNCAGTAGGACAGAGGGTAACATCGATGACTCGCTCATTGGTGGGAAATGCCTCGCGC  
 TGAGGCCCGGAGGCGAAGGTACCGAAGCACAGTATCACTGGTGTGATATGTCATGATCATCACTGCA  
 GGTAACAGCTCACATAGAAGCTACAGAATACATCAAGATACATGAGTATCATGGAACGAGAACAAA  
 CAAAGATAAATCTTTGAAGGCTGAGACAATAGCCATCTGTATTCAAACCTATTTTTTGAACATGATCA  
 ATGCTGGTGTTCGGCTCGGAGTGGACCTTTTATTTTAGTGTTAATGNAAGTTAAGATGGTTCTGTATA  
 CTGT

>'990913a2-045.scf' came from CONTIG 31 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-045.scf"(1>208)

CGGGGGGGCGTTAGACTAGGGTCCCCGGCTGAGGAATTGGCACGAGCCCCCTCCCCCTAGGCCCCGAC  
 ACCCGTCTCTGGTACAAGCAGACCAAGAGGCTCAAGCCATGGCAGACCAAAGCCGGGGGAAGAGAT



GCAAGCACAGAAGGCCTCCCGGGTAAAGATGTGACTGGTGGGCTCCTTTCTGCTATACTGGGGAGGG  
AGCAA

>'990913a2-046.scf' came from CONTIG 32 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
046.scf"(1>454)

CGGGGGGGCGTTAGACTGTGGTCCCCGGCTGAGTATAACTTTTTTTTCTTTCTTTGTGAACAGCTCAT  
GTTAATAGAGAGATGGAGCCCAAGAACAGACAGCTCGGTTTCGAAATACAAGTTTAGGAAAATCTTAT  
CTCAGTCATGCATAAAATATGCAGGGATATGGCAGAAGACACCAGAGCAGATGCAGAGAGCCATTTTG  
TGGATTGGATTGGATTATTTAATAACATTACCTTACTGGGGAGGGAGGATTGGAAAAAAAATGCCTTT  
GTGACAGCTTCTTATCTTTTTATTGTTGTTTCTTCTGTGGTCTTGTATGAGTGTGAATCATTCCTTCTTG  
TTATGNTNATTNGTAGTTNCAGTGAATGTGATACTTTTTATGATTTTTTCAAGTTTGAAACTTTATCAGT  
CTGTGTATAGACATACGTTTNCCTTTAAAATTATGCGTGTA

>'990913a2-047.scf' came from CONTIG 33 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
047.scf"(50>534)

GCACGAGGCCGATCTCTGCGAAGAGCTGGAACCCCGGGACCTTGGCGAAGTCCAAAATAAAGAGTGT  
CGAGACGCCTGGTGTGTGTTGGTGTGTTGTGNGCGTGCACGCCTGTGTGGGTGTGGGGTGTGTGTATG  
TGTGGTGTGTGTGTGTGTCTCTTTGTGTGGTGTATGTCTGTGTGTATGTGGCTGGGTGTGTCTGTGAGAC  
TTGCCCGCGCGGTCTTGNGCCCCGCGCTTCCCGGGGCGCAGGTGCATTGCAGACGGCACTGGGGTCCG  
CCGAGGGGAGCCTGGTGTGATTTTGGTCTCTTCCACCGCCCGCCAGCCCTGGGAGAGCCTTTGTTCA  
GCTGATGTGAGGGCTCCTGTTCTAGTCATGCCTGTCTGGACAACGATCAAGTCCGAGCACGCGGGGAG  
GCCCTAAACCCACTGACCTCAACCAAAAAGGAGGCGGACAACAAATCTCCCACCTGGGTGTGGGGTT  
GGGAAGG

>'990913a2-049.scf' came from CONTIG 34 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
049.scf"(8>579)

CGGCGTCTATAATAGNGGTCCCCCGGGCTGCAGGCGGGTGCACGGGTGGCGAGCGCAGACGGGAGAG  
GCTGCCAGACGAGCACCATGGCTCCCTGCCCGCTTCGCCCGCTGCTGTGGGTCTCGTGCTGGGGCTTG  
GGCTGGCGCTGCTGCGCGCCGCGGGCGGGGAGGAGTGCCAGGCACCACCCCTGCTCTCGCGGGAC  
CTCCTGGAGCGCGGACCTAAACAAGTGCATGGACTGTGCCTCGGGCCGGGCGAGACCGCACAAGGAC  
TTTTGCCTGGGCTGCACTGCGCGCCCTCCAGCCCCCTCTTGTGGGTGGGGCATTCTGGGGGGGCCCT  
GGGCTGGCCCTGGGCTGGGGTGGTTTTTGGTGTCTGGGCTGGGAGGGGGCGCAGAAAAGAATTTACAC  
CCCATCGGGGACGGGGGGGAGTGGCTGGGGGGCCTGTCAGGCGGGGCGCCCCCGCGGAGAGGTGGGC  
CGTCTTTTTTTTTTTTTTTGTGCTCCAACCTCAACCAACAAGCAGCTGTCTACACAGGGGGGAGATGGG  
AAGGATATTTTTTAGTTGTCCATTTCAG

>'990913a2-052.scf' came from CONTIG 35 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
052.scf"(8>705)

CGGCGTCTATATTATCTGTGCCTCGGCCTGTTTGCTGCTCTCTAACATCCATACTTGTACTGTACTTTCA  
CCTGTGGACCCTCTCCACATCAGACTTTTACTGTCCCTTATGGTTGTATACATTCCAAACCTATTCCAGT  
TGGTCCCAAGTGTCCATCCCTTATAACTCTGCCCTTGCTATTTAACCTCCAACCTAAGGTGGTCTAGATTT  
CCCTGATGGCTCAGCTGTGAAAGAATCCATTTTCAGCGCACAGGAAACCAGAGACGCAGGTTCAATCC  
GTGGGTCTGGGATGATCCCCTAGAGAAGGAAATTGTCTCCCACTCCAGTTTCTTGCCTGAAAAATCCCT  
GGACAGAGGAACCTGGCTGCTTCAGCGCAGAGGGTTGCACAGACTCACACCGACTGACCACCTACCA  
CATTGCTATGTGCTTTCTTTTTTATCTTCTCATGCTATTGCCAACCTGAATGCGACCTAACAGACCTGAA  
GAGGAATAAGAGAAATCTTCTGACGAAAGCATTAAAAAGCAGAAAGCCTTAAATCGAATATCTTGAA  
AGACTCATACATTAGAAATTGCTATGTTCTTAAACTCAACATTTCTCTTTTACCTCAACCTAAAGAACC  
GTCCGTTCCCTGTTTAGGGGAAATAAAAAATCACACTGCCACCTAACCAAGGAACATAAACATTTACTTC  
CTCCTCCTCT

>'990913a2-051.scf' came from CONTIG 35 at offset 34;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
051.scf"(47>556)

CTGCAGTCTAACATCCAGCCTTGTCCTGTACTTTACCTCTCACCTCCCACAGCAGCTTCACTGCCCTT  
ATGGTGTAACATCCAACCTTCCAGNGGTCCAAGAGCCACCCTACAACCTCTCCCTTGCTATTTAACCTC  
CAACTAAGGAGGTCTAGATTTCCCTGATGGCTCAACTGTGAAAGAATCCATATACAGNGCAGAGGAG  
ACAAGAGACGCAGGGTCAATCCGCGGGTGGGAAGATCCCCTAGAGAGGAAATGGTAACCCACTCCA

090913a2-053

GTATTCTTGCCTGTAAAATACATGGACAGAGGAGCCTGCGAGCTCAGTGCAGAGGGTTGCAAAGACTC  
TACACGACTGAGCACTANACATGCTTTGTTGCTTTTTTTTTTTTATCTTAGTTATTGACAACATGATGG  
ACCTACAGTACATGAGATGGATACAAGGAATATTTGTCTGGAGCAATAAGAAGTAGAAGGATTGATTG  
AATATTTTAAATGACTATACATTATAAATTTTC

>'990913a2-053.scf' came from CONTIG 36 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-053.scf"(48>595)

TCTTGTTGAAATGAAATACCACAACAAAAAGCAAGGAACAATGAGCAAGAGAAAAGGAGAGCTTTTAA  
AAAATTAACCTGGACCACTTTTGGGGGTTGGGGAGCAGAACTGCTTTTGGTGATCTCACGTGACGTGTG  
AAGGTACACTGTGCTTCTTTGCTTCAGGAAATATAGGGTTGTCTGCAAGGAACCCAAGGTACAGCCAA  
CGGGCGGGGGGTTTTTCAAATCCCAAACCTACCGACAGGCGTGAATGTTCTTGTAGTCCTCTGTAGA  
CTGTGTCCTGGCCCTGTCAGCCCTTCTTCAGCCTGCACCCTGTTCCAGAGCCAGTGAGACGGAGACACT  
GTGATGGAGCTCTCACTTCCAAGTGATAGTATTATTAATTTGTGTGTGTCAGACTATGACTCAGATGTG  
GGTGGATTTTATTTAACGATAATGACATTATAAACTTTATTTGTATTTGTATTTAATATCATTTTCATT  
TTTAATCTTTATTTGAGCACGTGTATAAATTAATACTTTGGTTTATGTTCTGATTTNTTTTACTCTA

>'990913a2-054.scf' came from CONTIG 37 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-054.scf"(52>252)

GGGCACGAGGTAAACCCAAGCCCTTGACCTCTTACAGGAGCTTTGTCTGCCCTCTTAATAACATCCGG  
CCTAACCATGTGATTTCACTTTAACTCAATGACCCTGCTAATAATTGGCCTAACAAACAAATATACTAAC  
AATATACCAATGATGACGAGATGTTATCCGAGAAAGCACCTTCCAAGGGCACCATACCCAGCTG

>'990913a2-055.scf' came from CONTIG 38 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-055.scf"(277>558)

GAGGAGAACTTCACGGNGGTCCCCAGNTGGATTTATTGTTGAAGGAGAACCACCAGGAAAGGGTTC  
CCACTTGCTCTTGGTCTGCTGGCCACCTGCTCTCAAAAAATACTACCTTGACAGACAAGATGCTACGGAT  
GAGGAAGTGAACGAAAGATGTTTTTGGAGTCCAGATGGGATGTGCGAGGCACACGATCACTCCTGT  
TGTGTGGTGTGTAAAAAAGATGGAAAGAAATATAATTAAAAAAACAACACTGCTGCTTTTGTGTTGTC  
TGGGTTGGGG

>'990913a2-056.scf' came from CONTIG 39 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-056.scf"(46>533)

TGGGACGAGGGTCAATCCTAGACATTATAATGCATGGTATGGTTTAGGAATGATTTATTACAAGCAAG  
AAAAATTCAGCCTTGACAGAAATGCATTTCCAGAAAGCACTTGACATCAACCCTCAAAGTTCAGTTTTG  
CTTTGCCACATTGGGGTAGTTTCAGCATGCACTGAAAAAATCTGAGAAGGCTTTGGATACCCTAAACAA  
AGCCATTGTTATTGATCCTAAGAACCTTCTATGCAATTTACAGAGCCTCAGTTTTATTGGAATGA  
AAAATATAGTCTGCTTTACAGAACTTNGAGAATGATCAGATNGTTCCCAANGATCCCTCGTTACTCTTA  
ATAGAAGGTTAAAGAGTTAGTCAACGCACTCGCCTGTGATNTCTTTGGGTGGGTAATCCTAAGACC  
AATACCAATAAAAGCAATGTAACCTACTTCAAGAGAGAGCATACCCAGAGAAAAATATGGACAAGATC  
CAGAGAGAGAG

>'990913a2-057.scf' came from CONTIG 40 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-057.scf"(48>291)

TCCATACGGCGTTGTCTTGAATTCCCGTCGTAACCTTAAAGGGAAGCTTTTCACAATGTCCGGGAGCCCTT  
GATGTCCTGCAAAATGAAGGAGGAGGATGTCTCAAATTCCTTGACAGCAGGAACCCACTTAGGGGGCAC  
CAACCTTGACTTCCAAATGGAACAATACATCTACAAAAGGAAAAGTGATGGCATCTACATCATAAATC  
TGAAGAGGACGGGGGAGAAGCTTCTGTTGGGCGCTCGGC

>'990913a2-059.scf' came from CONTIG 41 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-059.scf"(46>612)

TGCTGGTGTGTTGGCCCAAGAGGTCCCAGTGGCCCAACAAGGTATTCGAGGTGACAAGGGAGAGCCTG  
GTGATAAGGGTCCCAGAGGTCTTCCTGGCTTAAAGGGACACAATGGGTTGCAAGGGGCTCCCGGTCTT  
GCTGGGCATCATGGGGATCAAGGGGCTCCCGGGGCTGGGGGTCCCGCTGGGCCCAGGGGCCCTGCTG  
GTCCTTCTGGCCCCAGCTGCAAAGACGGGCGCATTTGACAGACTGNNGCACGTGGACCTGCTGGCATT  
TCGTGGCTTCAAGGTAGCCAAGGGTCTGCTGGCCCTCCTGGCCCCCTGGCCCTTCTGACCTCCTGGCCA  
AGGGGGGGGGTTCGATTTGGGTTTGTGTGACTTTTCAGGCTGCCCCACCCTCCTACTCTCTCNACCC

AGATTTGAANTGTGCACTTGTATCTTCACAACAATTGAAACTTTTTTTCAAAGCTTTAGAAAACCCCTC  
GCATCCCCGACTTGACCACCCCCCAAGGGACTGTTTTATTGTTGACTATCCAAGTGTCTTGTGTTAAG  
TTTTTTTTTTTTTGCGAACT

5 >'990913a2-075.scf' came from CONTIG 41 at offset 534;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
075.scf"(48>547)  
CGGACATTTCAGACAGAACGTGCGTACCAAAAAGCAACCGACCATCTTTCAAAAATAAAAAGAGGGTCCT  
GCTTGGAGAAACTGGCAAAGAAAGCTCCCTGATACTACAGAACTTGGTCTGGGCTTCAAGACTCCAAA  
GGAGGCCATCGAGGGCACCTACATTGACAAGAAATGCCCTTTACGGGTAATGTCTCCATTTCGGGGCG  
10 GATCCTGTCTGGCGTGGTGACCAAAAATGAAGATGCAGAGGACCATCGTCATCCGCCGAGACTACCTTC  
ACTACATCGAAAGTACAACCGCTTTGAGAAGCGCANAGAACTNCCGCGTGCACCTTTCTCCTGCTTAG  
GGACGCCAGATCGCGACATGTCACGTGGGCGAGTGCGGCCCTGGCAGACTGGCGCTCATGTCTCAGGT  
CACCAGCTCCGCACAAGAGCATTTCGAAGTTGAATGGCCTTGCTGTCCCAACACATAGTATTNCATTCA  
AAAAAAAAAAAAAAAAAAAAATAAAAAT

15 >'990913a2-060.scf' came from CONTIG 42 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
060.scf"(52>263)  
GCACGAGGCCCTTCTTCACCCCTTGCCCCCTCGCCATCACCCCGACTCTCAACACAGCACAAACCCCTGCA  
AACCCAAAGAGAATATTAATACTTGAAGCAAGAAGGGTGATGCCAGTCCCTCTCAATCATGGCCAGG  
20 GGATGCCAGGGCTTGCGCCCCCTGGACTCCTAGCCCTGCCAGGGCAAGGAGGGCTTTTCCCTAGAGCT  
ACTGGGC

>'990913a2-061.scf' came from CONTIG 43 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
061.scf"(54>571)  
25 GCACGAGGGACTGTTTTTCATCAAGAATAGTCTCTTGAGAAAACCTCAAATTTACGCTAACAAAAGGTA  
CATTTGCCCTCAGGGATGTCAGTATTTTTAGAAGCTCCACACATGGCTGTATCATAAAGAAAACCTTAGT  
TGAATTTTGTACTGCTGTTTTCTGCCCTGTACTGGAGCTTTAGGGTTGCTTGTGACTTTGGGACAAC  
TTTGGGTGATGAGGCTGCAGCTGATTTCTATCTTGATTTCATCAGGTACGGGAGTTTGAGGGCGCAGTCA  
TAGCTCTCTTTATTTACTGGCCACCNAGACAGACNAAAGTCGAGCCCTGAGGGAGGCTTTTATCGTCA  
30 GAATTTGCCCATCTCATGACCTCATGCCACAGTTTTCTGTGTTGTTGTATATTTTAGGTTCCGTGGG  
ACTGCCATCAGTCAGCCGACCGCGGCAGACAGCACTACCCCTCAGCTCTCTAACTCCACATCCTATATT  
CTCTGCGCCTGTGCCACCTGCTGATTTCAATGCTT

>'990913a2-062.scf' came from CONTIG 44 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
062.scf"(49>602)  
35 GTTCTGCGACCTGTTCTCGAACGCTCAGCGTGGTCCTCCTTCCGATTTGGAGATGCCTGTCTGGGGGA  
GGTGGCAACAAGTGCGGGGCGCTGTGGGAGGACACGGTACCACGGCCGAGGAGGTGCAGNGTGAC  
GGCCGGAGCTTCCACCGCTGCTGCTTCTGTGCATGGTTTGCAGGAAGAATTTAGATAGTACAACAGT  
GGCAATTCACGATGAAGAAATCTACTGCAAAATCCTGCTACGGAAAGAAGTACGGGCCAAAAGGGCTA  
40 CGGGTACGGCCAGGGCGCAGGCACCCCTCAACATGGACCGGGCGAGAGGTTGGGCATCAAGCCGAAAG  
TGTTCAACCTCACAGACCGACACAAATCAAACACTTTAATTTGTGAGAATTGGAGGTGCTGGAGTGTG  
AGATGTGGGTTCCGTTTCGCTNCGATAGACTTGTAGCTGAAGCCTGCACAACTGTTTCGTGTGCTAGGC  
GGGAGGTCTAGTCTACACTTGATGAGAAAAGTGAATTTGTAGATGTCCGAGACTCGCCCAAGTTTGCT  
TCGCAGGCTGGCC

45 >'990913a2-063.scf' came from CONTIG 45 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
063.scf"(47>258)  
GCACGAGGGAAAGTTTCAGACATCAGGTAAGTGTGTTCTAATTAAGATCATGAGTTCAAATCCCAAG  
CAGGGTTTTAGCTGGATTTGAGTCCTGGCCATGTGGGTTGAGTCCCAAAGTGGTTTTGGCTAGATT  
50 CAAATACTGGCACATGGGTTCAAGTGCCAATATGAGGTAAATGGNTTTAAGACCATTTAGGTTTTGT  
ATTCTTT

>'990913a2-066.scf' came from CONTIG 46 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
066.scf"(47>584)  
55 CGCCGGCCCCAGCGCGCTGCCACCGCTGCCACCCACCATCAACCAGCATGTCTCCGCTCACTTCAA  
CCGAGGCCCCGCTACGGGCTGTGGGCTGAGGACAAGAACAAGCTGGCCAGAAAGTATGACCACCAG

GGGGAGCAGGAGCTCCGAGAGTGGGTCGAGGGGGTGACGGGGCGCCGCATCGGCAACAACCTTCATGG  
ACGGACTTAAAGACGGCATGATTCTTTGTGAGTTCATCAATAAGCTCCAGCCAGGCTCCGTGAAGAAA  
GTAAATGAGTCCACTCATAACTGGCATCAGCTGAAGAACATCGTCAACTCATCATGCCATCACCAGTC  
GGGGTGAAGCCCTACGATATCTTGAGGCCACGACCTGTTTCGACACACCACCAACGCAGTGCATCACT  
TTGCGCTGCCAGATGACAGAGAAAGGACAGNGATGGGGAGGAATAGCGGAAGCGTACGTGATTGAG  
CAAGAGCTAAAGAAGCGACATTNGTGTCACTGGACCCAGTGCAGCAGAGCTGAGGTACGGCCCGC

```
>'990913a2-067.scf' came from CONTIG 47 at offset 0;"E:\SEQUENCE\export\EG_DB\990913a2\990913a2-067.scf"(290>553)
```

AACTTGAGTACTACACAAGCTGGCTGGATACTGGGCCAGCATCACTCCCACGCTCCTTTCACTGTACCA  
AAGACAGAGAAATGTCAGTTGGGAGCCAGGGACATGTCATGTCCGCAGTACAACTTGATCTGATGTGT  
GTGAGAGGACGTTCTTCATTCTCCACTTGATACAGCACCTATCGACAGGACCCACCCACTTTGTTTTT  
ATGATTACAGTTTCGAGTCCCTTGCCCTCCCTCCCACCCACATACTGACTTACCTCCCT

```
>'990913a2-069.scf' came from CONTIG 48 at offset 0;"E:\SEQUENCE\export\EG_DB\990913a2\990913a2-069.scf"(48>147)
```

GCACGAGGCCCGCTGAGAGGAGGCAGCCAGTGCCTACTCCACCGCCCGGCGACCCACCTTCTCCAA  
GTCCGACGGGCAGCCGCCCGGGGGCGACAAG

>'990913a2-071.scf' came from CONTIG 49 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-071.scf"(55>586)

GCACGAGGCGAGTTCGACGGGAAGAGGTTCCAGAATGTTGCCAAAGAAGGAGTGAAGTTTGATGAAA  
GTGAGAAAAGTAAGGAGAGTCGTGAAGCAGTTGAGAAAGAATTTGAGCCTCTGCTAAACTGGATGAA  
AGATAAAGCACTCAAGGACAAGATCGAGAAGGCTGNGNGTCTCAGCGCCTGACAGAGTCTCCGGGT  
GCTCTGCCAGCCAGCCAGACGGGCGGGNCTGGCATGGAGAGGATCATGAAAGCCCCAGCATACCA  
NACAGGCATGGACATCTCATCCATTATTATGCCACCAGATAAAACATTTGTTTTAACCCACCACCCACT  
ATCATAACTGCTTGAAGAGTTAGAGAGAGATGAATACTGTCAGATCTGTGTGTTTGTGTAACACACCT  
CGTCTGATTCTTTGCAACCTAAGATTGAGAAGATANATGATCTCGCTCACTAACATCACTGTGCAAGTG  
AGAGACCAGAGACTGAGACACAAGCACGAAGAACAAGATAAAGAGGAGACAGACGAC

>'990913a2-072.scf' came from CONTIG 50 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-072.scf"(55>600)

GCACGAGGGCCTGCCTGCCCAACCTGGACCGCGTGGGCCACCCCAAGGAGCGCTGCTTCGCCTTCTGA  
TGGACGGGGCCCTGCTGCCCGCTTTCCTGTAACCTGGCCACACCCACCCCTCCTGCCGCTGTTCAATTA  
CACCACCCGCCCCACGTCTCCAGCTGCGGACGGGTTCAGCCTGGCCTGCCCGTGCCTGGGAGGTCACC  
CCGCTGGGCTGGCCCCCTGAGGGGGCCCTTTGGGAGCAGGTGTGTGGTACAGGTGGGCTGCTGTTGGCC  
ACCTTTAAGACAGATTCTGTCTAGGCCTCGCCGGAGATGTTCTTCCCTCTCGNCCCTCCACATACAC  
ACTACTGGTGGAGGCTGCCAGCACCATGTCTCCCAACTCCCAGACATCCACACCTGGAATTAGAGAAA  
GTACAGCAACCTTACTACAGCGCAGCCTACCACTGAGCATGNCNCTNCCCTGCTGTTAGACCCGCC  
AGCTTCAAGTGAACATATGTACTGAACCATAGTCCATGGATGGCTGTGGTTGAGTGNCNACACCAAGCC

>'990913a2-074.scf' came from CONTIG 51 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-074.scf"(55>269)

GCACGAGGATAAGACCAATTGGTATAAAACAAGATTACTAGGAGGAAAAAGAAAATATTGTGGTTTA  
GAACTGGTACTGGAGAAGGCAATGGCACCCCACTCCAGTACTCTTGCCTGGAACTCCCATGGATGGA  
GGAGCCTAGGGGGCTGCAGNCCATGGGGGGTGCTAAGAGTCAGACATGACTGAGCGACTTCGCTTTC  
ACTTTTACTTTC

>'990913a2-076.scf' came from CONTIG 52 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-076.scf"(49>616)

GAGCTCCAGGACCGACAGGATGGGGTCAGCCTGCATCAAAGTCACCAAGTACTTCCTCTTCCTCTTCA  
ACTTGCTCTTCTTTGTCTGGGCGCGNGATCCTGGGCTTGGGATGTGGATCCTGGTCGACAAGAACA  
GTTTCATCTCCATCTTACAGACCTCCTCCACCTCGTTCAAGGTGGCGGCCTACGTCTTCATCAGACGCG  
GGGGCCCTCACCATGCTCATGGGCTTCCTGGGCTGCCTGGGNGCCGNCAAAGAGGTCCGCTGCCTGCT  
GGGATGTACTTTGCCCTTCCTGCTGATCCTCATCGCCAGNTGACTGCCCGGCTCTTTTCTATTCAAC  
ATGGGCCAGCTGAAGCAGGAGAGGGCAGCATCGTGACAAACTATTCACTACACTACACGACGGCTCGNGA

CAATTGCAGAGCCTGGATACTGCAGCTTAGGAAAGTGTGGGCTGGTCAATACTCATGNAAGAAAACGA  
CTATGATGACACACTTCCTGTCTGGAAAATGAGAGAGAGCTCTGAGCCAGAGGTNNTTGAGTCTTG  
CACAGACAACGCAAACCCAAAAG

5 >'990913a2-077.scf' came from CONTIG 53 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
077.scf"(53>548)  
GCACGAGGCTGAGGCTCGCTCTTTGCTCTGGGGATTCTGTGGCTTTTCCCAGTGCTAACCCACTCAACA  
AGAAACGGTTTACCAGACCATAACAGACCCAGAAGACAATGAAATTGTCTGCTTCTTAAAAGTGCAAAT  
AGCTGAAGCAATTAACCTACAAGATAAGAACTTAATGGCTCAGCTTCAGGAAACAATGCGTTGNGTGT  
10 GCCGCTTTGATAACCGGACCTGTAGGAAGCTGTTGGCGTCCATCGCCGAGGACTACAGGAAGCGGGCC  
CCCTACATTGCTTACCTCACTCGCTGTGACAGGACTGCAGACACGCAGGCTACCTGGAAGGCTCTGC  
AGAGGTTCTGCGGACAAGAGTGGCCATCCTACTTACCACGCTGTGTGAGTGTGCTTGGAGAAGAGAGA  
GATCAGGAATATTCAGATTTATAATACAGCGTGTGTAAACCCCAAGTGAGATTTTGCAGTCTGTCGGC  
GATGCCAGAGCATTGGANA

15 >'990913a2-078.scf' came from CONTIG 53 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
078.scf"(49>453)  
GCACGAGGCTGTGGCTCGCTCTTTGTTCTGGGGGTTCTGTGGCTTTCCCAGCGCTAACCCACTCAACAA  
GAAACGGTTTACCAGACCATAACAGACCCAGAAGACAATGAAATTGTGTGCTTCTTAAAAGTGCAAATA  
20 GCTGAAGCAATTAACCTACAAGATAAGAACTTAATGGCTCAACTTCAGGAAACAATGCGTTGTGTGTG  
CCGCTTTGATAACCGGACCTGTGGGAAGCTGCTGGCGTCCATCGCCGAGGACTACAGGAAGCGGGCCC  
CCTACTTGCTTTCCNACTCGCTGTGACAAGACTGCAGACACGCAGCTCACTGGTAGACTCTGCAGTG  
GTTCTGNGGGACAAGAGTGGCCATCCTACTTACCACGTTGTGTAGTTGTGCTGGAGAAGAGAGA

25 >'990913a2-079.scf' came from CONTIG 54 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
079.scf"(49>483)  
CCCAGGCCAGGCGGCCTGCCTATCCCCTCCTACTCCCGTCGCTGCCTCTCCACCCCTGTATCTGCGC  
CCGAGCCAGTTTGTGTGTCAGCGGCGGCCTCCGCCGCTCGAGCTGTTTGCAGGAGCTTAGCGCGCCG  
CCGCGCAGCGCCGCCCCAATTAAGTCTAATTCATTATTCAGCGCCCCAGTGCTCCCGCGCCAGCAGC  
30 TGGCGGCTCCAGCGTCACTTTGATGCCCCCTCCAGCCCTGGCCCCGCGTGAGTGCTAGGGAGCAGAC  
AGAGAGAGCTGCTTTCCCTTCTCGACCGAGAAGAGACTGAGGGGGTGGGATGTANNGAGGACAAAT  
CTGTGACTGTGGGAGCGACGCGCAGCCNTCGACCACCCACACATAAAATGGAAGTGANATCACCTT  
TTTTTAAAGAGGAACGGCCCCCTACT

35 >'990913a2-080.scf' came from CONTIG 55 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
080.scf"(54>301)  
GAACGAGGGCGGGAGCTGGGGTCTCTGGAGCGGGATGGCAGCGGGAGCCGGCCGGAGTTGGTCCCTA  
GGCTCACAGATCCCGCTCTCTGGCCTGAAACATGGCCCGGGGGACCTGGCCCTCTAACCCGGCCCTCGC  
CCCGACACGGCCGCGCATGCCAAGAGAGGGAAGCGACTCAAGTTCCGGGGCCCAAGACGCCTGCTCAG  
40 GAAGAGTGACCGTGGGGGATTATGCCAACTCGGATCCGGCAGGCGG

>'990913a2-081.scf' came from CONTIG 55 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
081.scf"(54>687)  
GAACGAGGGCGGGAGCTGCGGTCTCTGGGAGCGGGGTGGCAGCGGAGCCGGCCGGAGTTGGCCCTAG  
45 CTCACAGATCCGCTTTGGCCTGAAACATGGCCCGGGACCTGGCCCTCTAACCCGGCCTCGCCCCGACA  
CGGCCGCGCATGCCAAGAGAGGGAAGCGACTCAAGTTCCGGGGCCCAAGACGCCTGCTCAGGAAGAGT  
GACCGTGGGGGATTATGCCAACTCGGATCCGGCAGTCGGGAGGGCTGGAAGGGGCAAGAAAGCTGGT  
CGCCAATGCTGTTATAAGAAGTAAAATCTCTCTGTGGCTTGAAGCCTCCAGGTTCCGGCAGTGGT  
AGCTCTTTCTGGGGCTGTGAGCCCTGGACACATCGAAGAAGAGGGAAGTATGCCAGAGAGAAAGATA  
50 CATGAGAGACTACTACAAAAAGAAAGCAGAGAACAAGAGACCGAGGNACGGAGAGAGAGATCCAG  
GATTTTGGTTTGTGCCTCTTATCGACTGAGAATTGGATTTTCTGATTGAGACGCCGACTGCCTGCCCT  
GTGCTTTGACAGGGACGAACATAACACGATCCTTGCCCTGCCGCACCGACAAGAAAAGACGCTCGCTG  
GGTCGCTGCCATTTGGCTTCGTCGTT

55 >'990913a2-082.scf' came from CONTIG 56 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
082.scf"(55>136)

GCACGAGGCTTCTCCAAGCATCACCCCTGGGGAGTGTTTTCTAGACTTTTTCTCATACATGGGGAGCAGT  
AAGGTTTATCTAT

>'990913a2-084.scf' came from CONTIG 57 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
084.scf"(42>252)

ATAGACCTGTGGTCTTACATACACGCACCCACACACACACGCATTTATGTTTTTTTTTTTTTATTTAGTGG  
CTTGAAAAATGAAGAAAAATAATGTTTTTTGCTTTTATGTGGGAAATCATGGAATACCATACGAGTTAA  
GGCGTTCCTCTTTTCTCTTCGCTCACCCACGGGGTGACACCCACGCTCCCCACACCACTCATTGTTG  
GGAT

>'990913a2-085.scf' came from CONTIG 58 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
085.scf"(55>578)

GCACGAGGGCCCCGGCGGAGTGGGGGCTGGGGGTGGCCATGGATGATGATATTGCTGCGCTCGTGGTC  
GACAACGGCTCCGGCATGTGCAAGGCCGGCTTCGCGGGCGACGATGCTCCCCGGGCGCTTCCCGTC  
CATCGNNGGGCGCCCCCGGCACCAGGGCGTAATGGTGGGCATGGGCCAGAAGGACTCGGACGGGGGG  
ATGAGGCTCAGAGCAAGAGAGCATCCTGACCCTCAGTACCCCATTTAGACACGGCATCGTCACCAACTG  
GGACGACATGAGAAAGATCTGGCACCCACACCTCTACAACGGCTCCGTGTGGGGCCCTGAGAGCCCCCGG  
GCTGTGACCGAGCCCCCTGACCCCCAGCAACCGGAGAGATACCAATATGTTAGACCTCACACCTCCA  
TTACCGGCCTTCAGTGGCTGCCTGTTGCCTTGCCCACCACGATCGGAGGATCGTGACGGTACCCACG  
GCCATTAGAGTTACCCTTCCTGCATCTCTTGACCGGTGCGGACTGCGACA

>'990913a2-086.scf' came from CONTIG 59 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
086.scf"(49>646)

GGAAAAGGACCGTGGCCCTGAGGGCCAGTTTGTGATGGGTTATGTGGTACGACTGCACAATTTTCACC  
AGCTGTCTGCACCCCAGCCCTGTTTTACCTTCTGCCATCCTAACAAGATCCTATGATTGACAACAATC  
GCTACTGTACCTTGGGGGTTGCTGTGGAGGGGGACACAGGGCTGGGTGGGTTTGACAGGCTACTTTGAG  
ACTGTGCTTTATCAGGACATCACTCTGAGTATCCGGCCAGAGACTCACTCTTCTGGGGTGGTTTCATGG  
TTTCCCATCCTCTTCCCCATTAAGCAGCGCATTACGGGGGCGGAGGCCAGACCTCTGGTGCAGGTGTGG  
CGTGCAGCACTCTAGAAGGGGGGATGAGGGGCTGGACGGACGGGCTGCTTGCTTCACACCCACAGC  
GTCTACACATNGCTCTACCCGGCGAGGGCGAAGCGGGAGAGCGAGATTGTTTCGAGCCAGAGGGAGAC  
ACTGGCTTGTGCGGGCCATCAAAGACTTAGCTGCTTCTCCTCTCAGAGCAAGGGATGGGCCAGCACCA  
CGGAGATAGCCGGAGGGATAGTGTGGTTACGCTCGCCAGCCCGGAGCGGATG

>'990913a2-088.scf' came from CONTIG 60 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
088.scf"(217>525)

AGCATGATAGACAACCTTCACTCCTTTGCTCCCCAGGGCCACCCACCCCACTCACACCCAGCGAGGGA  
CTTCCACCCCCACGCAGGGGGTAACCCTGACAGCCCAGGAGGACTCACACCTCCTCCGTCCGGCTGAG  
CCCCCTGGGTCTTGGGAGAGACTCTTCAGCTGGTTCTCCTCGATCCTCGCCCCCGCCCGNGGGACG  
GGGTNGCAGNGAGGCGGGTGTGGCTGAGGGGGGCTCGGGCTGCCCCGCTGAGGGTGGGCGGGGGGG  
GGTTCTTCTGGCTGGAGATGGGGGGTGGTCTGTTAATC

>'990913a2-090.scf' came from CONTIG 61 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
090.scf"(56>651)

GCACGAGGGTTTAAAGTAAGCTCTGTTCCCTTTCAATTCACTCGTTTCAGTTGTGTCCGACTCTTTGCGAC  
CCCATGGGACTGCGGCACGCCAGGCTTCCCTGCCATCAACTCCCAGAGCTTGCTCAAACCTCATGTCTG  
TCAAGNCGGTGATGGACTCTGTTAGAGAATTTTAAATGCTATCTCTGTGTTTAGGTGAAGCAGTACCAC  
TCTGTTTTTAAGTGTGTGTGTAGCTGGACACTGTTTCAGATTACTTGCTTCCATCTTGTCTCTCTCAC  
ATTTCAATTATTGAAGATTTATGAATATACAGAGNAAAGAGAATAGTATCAGAACTGCCATGATTCATA  
CCCAAGTCAAAAATAACACTACAGCTAGCTGATTATTATAATGCNTCCACACCTCACTCACTGATTTTT  
AAGTAATCTACATGTATATTTTTNTTAATATTCATGCTGCTTAAAATAGAATCTTATTCATAACACGA  
CTCTTAGCTTTAAATGCTGATTCAGTGTCAAATGGTTTATTTTTTAATAAAAAAATTTTTTTTGCTAAA  
GAATTTAAGTTTCTTCAATAAAAGTTGTTTTTTTTTATTCAA

>'990913a2-091.scf' came from CONTIG 62 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
091.scf"(51>168)

TTTGGGGACGAGGCCAAAACGAATGCTTGGCTGCAGACAGGGTGGCCGCTTGGGCCCCCTCGGCGCG  
AGCCCACGTAACCTGGTTTGTACCGCTTTTGTGGCCGTGTTCTACGCGCGAC

>'990913a2-092.scf' came from CONTIG 63 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
092.scf"(56>355)

GCACGAGGCCGCCCCCTGCTGCTCTACCCCAAGTGGCCCTTTCCCAGGGGACCTCTCCACCCCTCCTC  
GAAAGAAGGACCGAAAGAACCGAAGTGGGGCGCGGAGGGGCGACAGGCTTTGGGGTACTCCGGAGG  
CCCCGCCAGCCCCTGGGGATGGGGAAAAGAAGACTCGAAACAAGAAAAGCAAGAAGCGGAAATTG  
AAAAAAGCAGAACGAGGGGATAGGCTCCACCTCTGGGCCTCCCCGGGCACCCCCAGCGATACAA  
ACCTGAAGAGAAGAGGAGGAGAAGGAGGGGGA

>'990913a2-093.scf' came from CONTIG 64 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
093.scf"(50>529)

TTTTTCTGGGATGTGAGGCAATCTGTTGGCAAAAATTACATGTATTTGTCTTCTCTATTTGTAAGATTA  
TATTTAATGATATTCTTTTCTTTATCAGAGACTCTCACTGCAGGCAGNGCTATTTCTTGTGCCTAAGACT  
ATTTCTGAAAGTTGCATCACTAATGATACTTGCCGAGTTGAGGGTGCAGAAAGTTTCTCATACCATATT  
CAAGATAATACCAAGCACATGTGGCCGCTGGAGAGTGAAGCTGTAGTACAGAATGCGTAAATTCTGTCT  
CCCAGGAAATCTGAGATAAGCAGGGCTGCTGGGGTTTTTCCCCTACTCTGAGCTGTGTTCTTCTTTT  
GGTAGCCTATGCTGNATAATGGATGCTAATAGTAATATTTTATGCTAGATTTCAGATTTGTCCTAGTAGT  
GTCTTTTCTATGTAGAACTTAACATGGATTTAGGGTGTGTGTTTTTTAAAGGGAAGGAGATT

>'990913a2-094.scf' came from CONTIG 65 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
094.scf"(51>517)

CAATTATCAAGGAGAGTTGAAAAAAGGTGATAACATCTATAATACGAGGACGAGAAAGAAAGTGCGG  
GTGCAGCGACTGGTTCGCATGCATGCCGACATGATGGAGATGTTGAGGAAGGGTTTGCTGGAGACATC  
TGTGCATTGTTTGGCATTGACTGTGCCAGCGGAGACACATTCAAAACAAAGATAATAGCGGCCTTTC  
TATGGAGTCAATTCATGTTCTGATCCTGTCTATTCTATAGCAAGAAACCCGTCTAACAAAGATGATAC  
TGAAAAATTTTCAAAGTTTTTGCAGGTTACAGAGAAGATTCCACATTATAGTCACTTTGACACTGCAGC  
AAAAGACATTGNTTTGTATGGGAGATTACACTGGAATTTTTCTCACGAAGGAAGAGATATGNTTGCTT  
GTTTACAGAAAACATAGTGTTTTAAGAATTTTTGTCCCTGTCTTTTCTTCCATAAAA

>'990913a2-096.scf' came from CONTIG 66 at offset 0;"E:\SEQUENCE\export\EG\_DB\990913a2\990913a2-  
096.scf"(58>577)

GCACGAGGGCACCACCAGCGGAAGCGCAACAACCTCATGACGCTGCCGGCGCACCGGCTGCAGCACC  
CCGTGCTGCTCTCCCGCCTGGTGGTCTGGACCACCCCAACCGCTGCAACGTCACCTACAACGGCAAC  
AACGGCATCCAGTACGTGGCCAGCCAGGCCGAGCAGAATGCGTGGGAAGTGGGCTCCCCGCCCTCCT  
ACTCAGAGGCCCTGCTGGATCAAAGACCCGCCTGGTACGACCTTCTCCGCCACCCTACTCTTAGACA  
CTGATCTTTGAACCAAGCCGACCTGCCCCCTTACCGCTCCGGTCTGCGTGCTGACAGCGCCGCTCCCAG  
CAGCCACAGCCTCTGAGCGTGACACACCACACCCGGGCACCTGACCGCAGAGGCCCCGTGACCC  
AGGACTCGCCCCAGCAGGCATGAGACAATACTTGCTTTTCAGTTTTTTGGTCTTTCTTTGCTTATGTCT  
AAACTGCGCTACGAGTTCTCGGGCCTTAGGGGGTTGAGGGCGTT

>'990928a-001.scf' came from CONTIG 1 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
001.scf"(44>661)

GGACGAGGGGCAGCATCGGCCTTTGCAGGGGGGGGCAGCAGCACCAGGCTCTGCAGCGGCAACCCCCC  
CCAGCGGCTTAAGCCATGGCGCTTTTTCACGGAATTCAGCAGCAGCCTTGCTGTAACCGACAAAGACAT  
CTTCGAATTAAACACATTCCTCGAGTTAAACACCAAAACCTCGCAACATGGACGAGATGAACTTTCTG  
AGCAGGGAGGGGTGAGGGGGGGGACTTCGTGTCCCCCTTCGACCAGTGGGGTGTGGGGGCGTGGA  
GAGCCTAAGACTACTAAATGACAACCTGGAGGGGGCCAAGCACTTCAAACATCATGGGTTCTCCTGCG  
AAAGGGTAAGCAGGCTCCTCCGAATGGCTGGTGTGGATGGTTGGNCTCAAAAACAGAAAGGAGATGC  
TTCTCCGGAAGATGGATGAGGAGAAAAGATTGAAGAGGTGATTTGATATCTGTAGAAAGAGACTGAA  
ACAGACAATGACCTGCCAGCCGAGAACGGGAACCCCTACCCCTAACAGAAATACAAGAACCCCAACA  
ACCAATGCACTCCAAGATACACATGACAGGCCCTCCTTTCCCTTCCCTCCGCCCTGCTCCCCTATTCTT  
TTTATTAGA









GATAATGATGACCCACCAGCTGCACTGATGCATAAGTCTTGCAATGGAACGGGAGACTGGATACCCCT  
ATCCACGGAC

>'990928a-018.scf' came from CONTIG 15 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
018.scf"(34>577)

CGTTCGACAGATAGCCGGAACCTTCTGTGCTGTGCCAGCCGCATCCCTGAGAAAAAGGGGAAGGTCGG  
AGTGAACGGATTTCGGCCGCATCGGGCGCCTGGGCACCAAGGCTGTTTTAATTCTGGCAAAGGGGACAT  
CGTCGCCATCAATGACCCCTTCTTTGTCCTTCACTACATGGTCTACATGTTCCAGTATGATTCCACCCAC  
GGCAAGTTCAACGGCACAGTCAAGGCAGAGAACGGGAAGCTCGTCATCAATGGAAAGGCCATCACCA  
TCTTCCAGGAGCGAGATCCTGCCAACATCAATGGGGTGATGCTGGTGCTGAGATGTGGGGGAGGCACT  
GNNGTCTCACTACCATGGAGAGGCTGTGCTCACTTGAGGGGGAGCCAGAGGTCATCATCTTGCCCTT  
TGCCAGCCCCCTGTTGGGAGGGGGGAACAGANAANATACACACTCAAATGCACATGCTCCGCACACA  
CGCTGCCCCCGCCAGCATCTACACTTGTCATGGAGACTATACATTGAGCCTCCTCACAAAATGGAGGCC  
C

>'990928a-019.scf' came from CONTIG 16 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
019.scf"(34>624)

CGGAAACCACGTACCGGCAAACCTGGCCTGGCTCCCGGGCAGGAGTATGATATATCCTTGCACATTGTG  
AAAAACAATACCCGGGGCCCTGGCCTGAAGAGAGAGACAACTACCCGCTTGGACGCCCCCAGCCAGA  
TTGAAGGGAAAAGATGTACAGACACCACCGCTTGTATCACTTGGTCCAAGCCCCCTGGCCGAGATCGAT  
AGCATTGAGCTCATGTACGGGATCAAAGACATGCCAGGAGATCGTACCACCATCGATCTCACACACGA  
AGAGAACCATTACTCCATTGAGAACTTGAAGCCGGACACCGAGTACGAGGTGGCCCTCATCTCCCGCA  
GGGCCGACATGTCCAGCAACCCCGACAAAGAGAACTTCAAAACAGCCTGCATGCGCCAGAAATCT  
CCGCCGCATCTCCAAACAGACACAGCATCACCTGGAGTGAGGAACGTGAGGCAGCCGCCGACAGT  
AAGAATTAATATGCTCCATCTTGGAGCGACACGCGGAGAGAAGACCCAGAACAAACACACAACAAAC  
ACCTACAGGCTGAGGCAGAAGATTGGTTGGGGGTGGTGAAGAGAAGGAAG

>'990928a-020.scf' came from CONTIG 17 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
020.scf"(35>533)

CTGAAATTTAAGGAATATAATCTATTGCTTTATTTTGGCACTGGTTTGCAGCATGTGATGTTTCTTTCT  
GTGTACATGATATGCTCTCATCTGGATGCTAAACTCAGGAAATCAGAGAAATGCATATGCGTTTTCTAT  
GTTGATTTCTCCTTTTCTTAATCATGCTTGTCTTAAAAAAAATATTATCTAAAATTTACTGGGAACTGGA  
TTCATAGCTGGCACCTTGTTTTATGTAAACAGATTGCAGATAGACCAAAGATCATCTGGACCATTTTG  
TGGTTCCTGCCTGTCTTCTGATTATCGCTCTCTCATCCATCCTTTCTCTCTAGAAAATTTTCTTTTCTG  
GTCTTCTCCTTATGCTTCTTTGATCTCTGACTTTCAGTGACTTANGGGAATAGTTACATTCCCCTGGATT  
ANCTGNTAGCTACCTCCTGCATCCCTTANGGATTTTATCTTAATTCTAATTTGTCTTCAGTTANATCCT  
TCTCCAATGT

>'990928a-023.scf' came from CONTIG 18 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
023.scf"(35>601)

CGCCACTGAAGATCCTGGTGTGCGCCATGGGCGCGCCCGCCCGGGGTTACCGGGATTGTAAGAACA  
AGCCGCACCCAAAGTCTCGCTTCTGTGCGAGGGGGCCCTGATGCTAAGATTCGCATCTTTGACTTGGGG  
CGTAAGAAGGCCAAAGTGGATGAGTTCCCACTCTGTGGCCACATGGGGTGAGATGAGTATGAGCAGC  
TCTCCTCTGAAGCCCTGGAGGCTGCCCGTATTTGTGCCAACAAGTACATGGTGAAAAGATGTGGCAAA  
GATGGTTTTACATCCGAGTGCGGCTCCACCCCTTCCATGTCATCCGCATCAACAAGATGTTGTGTTGT  
GCTGGAGCTGATAGACTCCAGACAGGTATGCGCGGTGCCTTTGTAAAGCCCCAGGCACAGTNGGCCAG  
GTCCACTTGNCCCAGTCATATGTCCATCCGCACCAGCTGCAGACAAGGACATGGATTGAGCCTCCGCG  
GCCAGTTCAGTTCTGCGCACAAATCAATCTTATAATGAGATTACAAGTCACCGAGATTGAGAATGA  
GAGAAAGGATATCAACGCTGGGG

>'990928a-051.scf' came from CONTIG 18 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
051.scf"(33>601)

CGCCACTGAAGATCCTGGTGTGCGCCATGGGCGCGCCCGCCCGGGGTTACCGGTATTGTAAGAACA  
AGCCGTACCCAAAGTCTCGCTTCTGTGCGAGGTGTCCCTGATGCTAAGATTCGCATCTTTGACTTGGGGC  
GTAAGAAGGCCAAAGTGGATGAGTTCCCACTCTGTGGCCACATGGTGTGAGATGAGTATGAGCAGTTC  
TCCTCTGAAGCCCTGGAGGCTGCCCGTATTTGTGCCAACAAGTACATGGTGAAAAGCTGGGCAAAGAT

GGTTTTACATCCGAGTGC GGCTCCACCCCTTCCATGTCATCCGCATCAACAAGATGTTGTGTTGTGCT  
 GAAGCTGATAGACTCCAGACAGGTATGCGCGGTGCCCTTGGAAAACACCAGGGCACAGTGGCCAAGG  
 TCCACATTGTCCAGTCATTAGTCCATCCGCACCAGCTGCAGAACAGGAAATGTGATGAAGCCTCCGCG  
 GCCAGTTCAAGTCCTGCCGCACAAATCACATTTAAATTGGGATTACAAGTCAAGCGAGAATGGAAAGT  
 5 GGAGAAAAGATATCCAAGGTGGGG

>'990928a-024.scf' came from CONTIG 19 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-024.scf"(27>564)

CTGGTGGTGTCTCTCAGGGGCTGAAGCCCATAAAGGCCCTCAGGAAAGCAGAAAGCTTGTATATATCT  
 10 CTTTGTGTCTGTGAAGCCAAAGTGAAGGCCCAGGCCGCGCCGAACAGGGACGTGCAGAGAGAGATTG  
 CGGACCTCGGTGAGGCCTTGGCCACTGCCCTTCATCCCTCANTGGCAAAATGATGAATTACGGGAGAAT  
 TTTAAGTATCTGAATAAGGTCATGGATGACCTATACCGGGCTAGCAAAGCCGATGTGCAGAATCGGGT  
 GTTGGAGAAGACTAATCAACTCATCGACAGCAGCCCCAACCAGCCCCTGGTCATGCTGGGAGTGGAG  
 AGCGGCGCCTCGGCCAAGGCCTGATCGAAGCCTGTACTCTTTANATGCTTCCCCCACACGCCGTCTGC  
 15 TCTTTACATGGATACGAGCCGCAGATACTGCTTGGTCAGTACCCACATGCAGCACGGGGCTGAGGCAT  
 GAGGGGGAGAGGGTCAGCTGTGATGCAAGAGAGGAAACGGCTGTAGCCAGCAGAGGGGCTCTGT

>'990928a-026.scf' came from CONTIG 20 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-026.scf"(34>601)

GGAGCGAGCGCCATGGTGCTGCTGCACGTGCTTTTCGAGCACGCGGGCGGCTACGCGCTTCTGGCGCT  
 20 GAAGGAGGAGGAGGAGATCAGCCTTCTGCTGCCGCAGGTGGAGGAGGGCGTGCTGAACCTGGGCAAA  
 TTCCACAACATCGTTCGTCTTGTGGCCTTTTGTCCCTTTTCCTCGTCCCAAGTTGCCTTGGAAAATGCCA  
 ACGCTGTGTCTGAAGGTGTTGTTTCATGAGGACCTCCGCTGCTCTGGAGACTCACCTGCCACCCAAAA  
 AGAAGAAAAGTACTTCTGGGAGTTGGGGACCCCAAGATAGGTGCGGCTATACAAGAGGAGTTAGGGTA  
 25 CAACTGCCAGACTGGAGGTGTCATAGCCGAGATCCTTCGAGGAGTTCGTCTGCACTTCCACAACCTGG  
 TGAAAGGTCTGACCGATTTGTCTGGCTGTAAAGCCCAACTGGGCTGGGACACAGCTATTCTGTGCGAA  
 AGTTAAGTTATGTGAACCGATGGACACATGATTATCCAGTCTATANCCTCCTGGACACTGGAAAAGAT  
 ATCATACTTCTTCTGCGTGTAGG

>'990928a-027.scf' came from CONTIG 21 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-027.scf"(33>427)

CTTAATTCAAAGAGGGGTGGAAACGTGGAGCAGCGGAAGTCTTCCTGGGCGCCTAGATTCCCAGGAG  
 30 GGAAGGAGGAGCTGACTGGGAATAATTTTTCTCCTCACCCCCACGCCCCCGGATATCGCCCTCGGC  
 ACTCACCATGAAGAAAAATGAATAGAGGGGGGGCACATGGATTTCAGTAGCCGCCGAGTGTGGGAA  
 35 CTCCAGGTTTGCTTTTTATGGTTTTCTGGTGAAGAGCGCATGTGAACAAATCCATGAACAAACCCAA  
 GAGCTGTGAATATTCGCACAGAAGGTGCTGGGGCGGAGTGGGAGGCGGCGGCAACTAGCCTTCAGGT  
 GGGAGGGAGAGAGAAGATCGCCCCACTGACCTTGAAGACCTCCCTGTAAGTCCCACG

>'990928a-029.scf' came from CONTIG 22 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-029.scf"(39>424)

GCACGAGGCTCTTTCTGTAAAGGTGCAGAGGTGGCATCAATGACGATGAATGTGATCCACACTGTGC  
 40 CTAACCTGGATTGGCTTTCTGTGTGGATCAAAGCCTATGCTTTTGTGCATGTTGGTGACAATTCGAGAG  
 CAATCAATACCATTTGTTCACTANAGAAAAAGTCCTTGTTGAGAGATAACGCGGGACCTACTGGGAAG  
 CTTAGCAGATCTGTACTTCAGAGCTGGAGACAATAAGAACTCTGTCTCAAGTTTGAACAGCACAGAG  
 45 TTGGATCCATATCTAATAAAGGAATGATGTGTATGGCTATCTCCCTGCAGAGAAGACGATGGAGNAGN  
 NGGAGACCTTGCTGCCGCCTTTTATATATCTGACCACAGCACACC

>'990928a-030.scf' came from CONTIG 23 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-030.scf"(39>593)

GCACGAGGCGGAGACGCGAGGAGCAGGAGGCTCGGGAGAAGGCGCAGGCCGAGCAGAGGAGCAGGA  
 50 GCGGCTGCAGAAAGCAAAAAGAGGAGGCCGAAGCTCGGTGCCCGAGAAGAAGCAGAGCGGGAGCGTC  
 TGGAGCGGGAAGCACTTCCAGCGGGAGGAGCAGGAGCGGCAAGAGCGTATAAAGCGCTTGGAGG  
 AGATTATGAAGAGGACTCGGAAGTCAGAACTGCTGAAACCAACAAGCAGGACAGAAGGAGGCGAC  
 GGCCAACAATTCCAGCCCACGGATAGACCCTGCGAAAGCTGTGGAGGGTCCGCCTGCCGGGCTGCAG  
 55 ATGAGGAGCTGGGCCCCCAGAGCCTCATGGGAGCCTGCCAACAAGAAGTCGCTGGGTCCCTGGTGAT  
 GGGCTGCAGCTTGCCACGCACCAGATAACGGTTNTCTCTATGGACCCTCNGACAAGAGTGGCNCAGACG

CACAGCTCTCTGCCTTCCAAGCATAACTATTATAAATTGGTGCAGCCCTAGCCATAATCTTAGGTTGCT  
GTTTCAGCCAGTATAGCTCTT

>'990928a-031.scf' came from CONTIG 24 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
031.scf"(34>418)

TTTCAGAGATGGAGGCAAACATGAAGGGAAAGACATGTAATGAAGATTTTTTTTTTTTTTAATCGTGGT  
CTTTTTTTTTTTTCCAAAGCAATGTTTAACTAATAAATATTTTTTTATGAAGGGGAAAGCGGGAAAAT  
CACATCTCACATTTTGTACCTTCCCGTGTATGCGTCGGGGTTCGGCGTCTGCATCACCAACGCGGAAG  
GTGGGCCATCAGGCGGCTCGTTCTTTGGGGTAGGGGAGGGGCGGAGAACCAAGATTTTGCATCAAGCT  
CTGGATCCTGACGGGGTGTATGTTGGGACTCTGAGTTGGGAATAGTCACAACACTGCCAGAAGCTGG  
ATAGGGACCTCGATTGAAAGGACACAGCTACTGCTTCCACTT

>'990928a-032.scf' came from CONTIG 25 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
032.scf"(39>446)

GCACGAGGCCCGAGGCGGGAAGGCGTGGAGGCTCCTGTGGTAGCCCTCCTGAGCTGTGCTGGAAGCCT  
GGACTGACCAATCACCCAATCCAGTTCTTCTGCAAACTCTGTGGCCAGCCTGGCATCAGTTCAGG  
CCTCTGCTGGGGGGAGGGGGGCCAGGCCTGGTTGTCTAAATGCAGGCAGCTGGCAGAGGGGGGGTGG  
GTATGTTTCCATGTTTACCATGGGTGTGGAGAGAAGTTGGGGCCCTACTCTCCAGCTGAGCGGCC  
TGCGGCTTCAGTGCATGCATTGATGCGTNTCTGTCCTGAGGCTCATCTGTGTGTGTGTTTGTGGTTTAA  
AATACTATGTTTGGCCCTCCTCACAAAAATGCACTTGTATATTCCCTTTAGTGAAAAATGGTAAGGGAT

>'990928a-035.scf' came from CONTIG 26 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
035.scf"(39>316)

GCACGAGGCTTAACCCACTGGGTTTATAAGAAGTATCCAAACGTGTTTAAAGAAGATCCGAGGCATTGT  
GGAAGAGAGCGTGACTGGGGTTCACAGGCTGTATCAGCTCTCCAAAGCTGGGAAGCTCTGTGTTCCGG  
CCATGAACGTCAATGATTTTGTACCAAACAGAAAGTTTGATAACTTATACTGCTGCCGAGAATCCATT  
TGGATGGCCTGAAGAGGACCACAGATGTAATGTTTGGTGGGAAACAAGGGTAGTGTGTGGTTGTGG  
AAGGGG

>'990928a-036.scf' came from CONTIG 27 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
036.scf"(39>557)

GCACGAGGGCGCACTGCGCCCGGCCAGCTTCTTTCAAAATGTCTACCGTTCATGAAATTCTGTGCAA  
GCTCAGTTTGGAGGGTGATCACTCCACACCTCCAATGCATACGGGTGAGTCAAAGCGTACACTAACTT  
TGATGCTGAGCGGGATGCTCTGAACATTGAAACAGACATCAAGACCAAAGGTGTGGATGAGGTCACC  
ATCGTCAACATCCTGACCAACCGCAGCAATGAACAGAGACAGGATATTGCCTTCGCTACCAAAAAG  
GACCAAGAAGGAACTTGCATCAGCACTGAAGTCAGGCTTGTCTGGCCACCTGAGACAGTGATTNTGGN  
CCTATTGTAAATACTGCTCATATGATGCTTCTGACTGAAAGCGTCATAAGGGGCTGGGACTGATGAGA  
CTTCTATTGGAACATCTGCTCAGGACAACCAGACTGCAGAATCACAGATTTAAGAAAGTACAAACGA  
TTGGAAAGAATTGNTTCGAACATTGGGATTTCGAGTGAGGCGCC

>'990928a-037.scf' came from CONTIG 28 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
037.scf"(39>565)

GCACGAGGATATTCCATTTTGCATTTTCCCCCTACCCCCAAGAAAAAGAAATGCAAAAAGGCAAAATG  
GTTGTTTGAGGAGGTTTACAAATAGATGAGAAAAAGAGAAAGCGAAAAAGCAAAGGAGAAAAAGGA  
AAGATACATCCATCTGAATGCAGAGTTCCAAACAATATCAAGCAGAGATTTAAAAAAGCCTTCCTAAG  
TGAACAATGCCAACAAAGGTCCATCTATTCAAAGCTGTGGTTTTTCCAGTAGTCGGGTATGGATGTGA  
GAGTTGGAGTATAAAGAAAGCTGAGCGCCAAAGAATTGATGCTTTTGAAGTGTGGTGTGTTGAAGAC  
TCTTGTNATCCCTTGGACTGCNAGGAATCACATCATATCATTCTAAGNAAANACTCCTGCATATTCTG  
GAGGACTGAGTTGAAGCTGAACTCCATACTTTGCCTCTGATGCAACACTGACTCATGAAGACGTGATG  
TGGGAGATGCAGNAGAGAGAGGGGAGAAGAGATCAAGGTGGATGCTCCTGCTC

>'990928a-053.scf' came from CONTIG 28 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
053.scf"(39>582)

GCACGAGGATATTCCATTTTGCATTTTCCCCCTACCCCCAAGAAAAAGAAATGCAAAAAGGCAAAATG  
GTTGTTTGAGGAGGTTTACAAATAGATGAGAAAAAGAGAAAGCGAAAAAGCAAAGGAGAAAAAGGA  
AAGATACATCCATCTGAATGCAGAGTTCCAAACAATATCAAGCAGAGATTTAAAAAAGCCTTCCTAAG





AAACAGATTTAAGAAATCTGTTTATGGCACCAATATTTTTCTTTCAAGCTTTGTCTTTCCAGCACCAA  
ACGTTAGATGTAATACACAAGCACACATACTGTGTGTGTGGGTGTGTGCATTTGTGCATGTGGATTTTT  
ACAAAAGTTNTTATTGAAAAGCAAGAAATATATAGCACTGATACCTCTTTCTGGACACAGATACTGGT  
TTCTTAACATATCACCTCCCCCTCTCCAAAAAAATTTTCAGCAGNAAAC

>'990928a-046.scf' came from CONTIG 34 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-046.scf"(39>526)

GCACGAGGCTCTCCTTACCTAAGTCCAGATTTGTTTTTAAGGCATAGAATGTATAGCAACCCACCCAGT  
TCCAATCTGACTGATTTTTCCAGACAAGAAACAAGCAAAGTACCATGGATGGCTGGAGGGCATCGAC  
ACCGACTGCAGGATACACGATGCCGCAAACAGGCAGCAGCCTCTTCATACGAGTGTCCAGCTACTCCC  
TGGCTTCCCCACTGTTGTATAAAGAAGGATTTGGCTGGTCTTTGTGGCACTTCCTAAGAGGAACCTAT  
AAACTTTATAACTTCCTTGGTGATAGGAGTGTCTTTGTTATTCATGGTGGACCCTTTGGATCTCAACTT  
TTTACTTAACGAGGTGACTCATGGTGGGCCCTANATAGTTTCAGGATGGGCTGGGTGTGGCTGAGAGA  
TCAACCATGAGATACAAAGCTGGGCCCTGAGTATCTGCTTCTGACATCTGGGTGGGAGAGAGAAAGG  
GAAATGAGN

>'990928a-047.scf' came from CONTIG 35 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-047.scf"(33>617)

AATTCGTGACGAGGAGAGAACTAGTCTCGTGTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTGTT  
TATTTTTTCAATTTTTAAAAAACAAATTACCCCAACAAAACACAAAACCTCCCCATCCCAAAGCAGATA  
AGCTTAACACGTTAGGGTTAACAGGAGAGAAAGGGGTAAAGTCACACACGACTTGGGGGTGGGGGG  
TGACGCGGCCGGAACCCGGGGGGGGGCACGGTTGCTTATCGCCCCAAATAAAATAAACACGGGGCCCT  
CCCCCTAGGGAGAGGAGGGGGAAGGGAAGCACGACGGCTGGACAAACATGCGCGTTATGCCAAAACC  
TGGCTTAAAAAAAAGAAAACCCACAAGCAGGAACGCTCAGGACACCTGTGAGTAGGGTGGGCAGGA  
GGGGATCGGCCAAAAGCCAAACCAACCGAACCCGGGGGCCCTGGGCCCCACCTGCCTCACAGATGCGG  
GACCCACCCCTGGCTTTCGAATAAGGAGCTAGGGGGACACACCCACCCCTAGGCCATCCCAGGAGGCCC  
AGCTTGACGCCCCGCCCCGGGTCCCCGCCATTGGAGCGGGGG

>'990928a-049.scf' came from CONTIG 36 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-049.scf"(26>628)

CTGTTTAATTCCGGCAGGAGGCTCAGCTGCAGCCCGCACCGTTGCCGCTGGTACCGGGTTGGGAACAG  
GAGCCTAGGGGTGCTTGCAGCAGGCCGTCCCGGGCAGCAAGGTGGGGGGCCCTACAGCGATGCTCCG  
AGGCATGTACCTCACTCGGAATGGGAACCTCCAGAGGCGGCACACCATGAAGGAAGCCAAGGACATG  
AAGAACAAGCTGGGCATCTTTAGGCGGCGGAACGAATCGCCTGGGGCCCAGCCAACGGGCAAGACAG  
ACAAAGTGATGAAGTCATTCAAGCCCACTTCAGATGAAGCGCTCAAGTGGGCGAGTCCTTTGAGAGCT  
ACTGGTCCACAATACGGTCTAGCGGTGTTCCATGCCTTCCTCCGACTGAGTTTATGAGGAGAACTGGAT  
TCTGCTGGATGCGAGACTTCAGAAGNNCAGCACAGCCAGATGCGCCAAGCANAAAACTTGCTGGACA  
TCGCATCAGCGGCAGGAGAACTGACTGNAACAGGACAACAAGACACTANANGTACTCGGCTGTTGA  
CTACAATGCATTGGTATGTGAGATCTACCCCTCTCCTGCCTTCTGACTTACAAAAAAACCC

>'990928a-050.scf' came from CONTIG 37 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-050.scf"(42>608)

GCACGAGGCTCGCTTCTCCCGGCCGCATCCCGCGGGACCGGAGCGAGCAGCGGGGACCATGTTCCGAC  
GCAAGTTGACGGCCCTTGACTACCACAATCCTGCCGGCTTCAACTGCAAAGATGAAACAGAATTTAGG  
AACTTCATTGTTTGGCTTGAAGACCAGAAAATCAGACACTATAAAATTGAAGACAGAGGTAATTTAAG  
AAACATCCACAGCAGTGACTGGCCCAAGTTCTTTGAAAAGTATCTCAGAGATGTTAACTGTCTTTCA  
AGATTCAAGATCGACAGGAAGCAATCGACTGGCTTCTTGGCTTAACTGTTAGACTTGAGTATGGAGAT  
AATGCTGAAAAATACAACAAGGACTTGGTACCTGATAATACAAAAAATGCTGACAATGCAGCTAAAA  
TGCAGACCATTGATCATTTGGATGTAAATATCCTGATTTAAAGGCTGTGTATGTCTTGGCTACCTTCTC  
AATCCACGTATGATGATACTGNAAGCTAAGCATTGCATTTGTCCAGACGCCGACCAGAGCATGCTAGC  
AATAATGAGAGGTGCTGTGCTAA

>'990928a-052.scf' came from CONTIG 38 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-052.scf"(34>527)

CACCGCCGGGGGAGAGGAGGGGAGCCTGTCCGAGCCCCGGCCCCAAGTAACGCCGCCGCCCGGAG  
CCGCCTTGAGTCTCTCTCCCACTAATTGCCTCTTTGCATAGCACCGGCCCTGCCCCACGCTCACT

GGTACCACTACAGCGGGACGGGCCATGGCGGGGCGGGGAGGCGCAGCGCGACCCAAACGGACCAGCTG  
CTGGGAACAAGATCTGTCAGTTTAACTCTGGTCCTGCTGGGGGGAGTCCGCAGTGGGCAAATCCAGCCT  
CGTCCTCCGCTTCGTCAAGGGTCAGTTCCACGAATACCAAGAATAGCACATTGGAGCGGCCTTCCTCA  
CACAGACCGTCTGCTTGGAGACACACAGTCAAATTGAGATCTGGGACACAATGGACAGACGGATCAC  
5 ACCTGCCCCCTGTATATCGGGGGCCAGCTGCTCGGGGGCTACACATCACACACAAACCTTGACGGCA  
GACTGAGAAGANGTAAGAGN

>'990928a-055.scf' came from CONTIG 39 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
055.scf"(31>112)

TTTTTATATCACAATCAATAGATTTACCAACAACCGGGAGCTGCAACTGCCTCTTTGAATGGGGGTGG  
GGTGGGGGAGNAGG

>'990928a-056.scf' came from CONTIG 40 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
056.scf"(26>376)

CTGCTGGCCATACCTCTTAATAATACTTGATTTTTATACATTCACATGTTTTAAATGCTCAAGTTTGTAG  
AAGACACTAGGAGAATTCCATTCCATTTCTGGATGGTTGCTGCTCTGGCTTTTTAAACTTGGAACCTA  
ACGTTTATTTAAAGCAAAGAAAAATCTTTAAGAGGCTAAATTGATGCTGCTATTATTGCTGTGAAATT  
GTATAAAGATTAGGATTCATGCCAGTTTTTTTAAATCTAAAAAATCATGTGATTGCATTTAAGGGTTTA  
TATTTAAAAAAGAAATAAAGTTTTAAGAGCAACACATTTACTTATTATATATGTGGAAATACTTGTTA  
20 NGTGT

>'990928a-057.scf' came from CONTIG 41 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
057.scf"(26>601)

CTGCTTGCGGACCTGCTGGAGCTCCTGGCACTCCTGGACCTCAAGGTATTGCTGGACAGCGTGGGGTG  
25 GTCGGCCTGCCTGGGCAGAGAGGAGAAAGAGGCTTCCCTGGTCTTCTGGGCCCCCTCTGGGGAACCCG  
GCAAACAAGGTCCTTCTGGAGCAAGGGGTGAACGCGGCCCCCTGGTCCCATGGGCCCCCTGGATTG  
CTGGACCCCTGGCGAGTCTGGACGTGAGGGAGCTCCTGGGGCTGAAGGATCCCACTGACGATATGG  
TTCTCCTGGCGCCAAGGGTGACCGNGGNGAGACCGCCCTGCTGGACCTCCTGGTGCTCCCTGCGCTC  
CCCGGGCCCCCGCCCCGTGTCGGACCTGCCGGCAGACCGGNGATCGNNGGNGAGACCCGTCTGCTGGTCT  
30 GCTGGTCCATTGCCCGGTGTGGCCGNGGCCCCNTGACCCAGCCCCGAGNGACAGGGGAGAAGGGAC  
AGGCGAAAGATAGGGCACGGGGTTTTGTTCAGCCCCCGCCTCGCTTCTGGAGATGACTCGAGCTTG  
TCTTGTGCCCCGCCCGCTTGTGTTTCAATTGA

>'990928a-058.scf' came from CONTIG 42 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
058.scf"(26>628)

CTGCTTTAATTTCGGCACGAGGCAGTGACATTGTGCCACATGGGACGGTATTCGGATGGGGGAGAGAC  
TCCGCACCATGTCCTGCAGCGACAAGATCCTGCGCTGGAACGTGCTGGGGCCTGCAGGGGGCACTGTT  
GACCCACTTCTGGAGCCTGTGTATCTCAAATCCGTCACTCTGGGTTACCTATTAGCCAGGGGCACCT  
GACCCGCGCCATTTGCTGTCTGTGACAAGAGATGGAAGAGCGTTTGAGGATGGACTTCGACATCCCT  
40 TTATTGTCAACCACCCCAAGGTTGGCCGAGTAAGAGTATACAAATCCAAAAGGCAAGATGGGAGACC  
AAGAGAAAAGGTCAACTGGTGTGTTGGGTGATGCTACGACTCGAAATCTGGATGGACAGAGCACCGGG  
AGGACCACGGACGAATGTCCGGAGAACAAAAGACATTTTCTTATTAAGAGCTTGTCTTCGATCCGAAA  
AATATTAATCTCTAGGGAGCAAAAAGTCCGGATACAAAACAACTATTAATAATTGAGAAGGCTAGG  
AAGGTACAGCCAGAGAAAATTTACTGCGGGTGGCGGGTGGGGGGGTTTCAGGGGGAAAGGGG  
45

>'990928a-059.scf' came from CONTIG 43 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
059.scf"(34>633)

TTCAAGATGAAGCTGAACATCTCTTTCCCGGCCACTGGCTGCCAGAAGCTCATTGAAGGGGACGATGA  
ACGAAAACCTTCGTACCTTCTACGAGAAGCGTATGGCCACAGAAGGTGCTGCTGACGCTCTGGGGGAAG  
50 AATGGAAGGGTTATGTGGTCCGAATCAGAGGCGGGAACGATAAGCAGGGTTTCCCCATGAAGCAGGG  
TGTCTTGACCCATGGCAGAGTTTCGCTGCTACTGAGTAAGGGGCATTTCCTGTTACAGACCAAGGAGGA  
CTGAAGAGAGAAAGCGCAAATCTGTACGGGGTTCATTGTGGATGCCAATCTGAGTGTCTCTCATTTGG  
TCATCAGGAAAAAAGGGATAAGGATATTCCTGGACTCACTGATACTACAGGCCCTGTGCCTGGGTCCC  
AAAGACCAGCAAATCCGCAACTTTCATCTCTTATGAANAGATGCCGCATATGTGGGGGAAGCCCTAACA  
55 AACGTAGAACTAGACTAAGCACAGATCACGCCTGGACTCCGANTTGCACCAAGCGCGGTTGTTGAG  
ATAGGATATAAAAAGAGAGTGGAATGTACTTGTAGAAGAGAGCAGAAAGAGAAGAGCA

>'990928a-062.scf' came from CONTIG 44 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-062.scf"(26>467)

CTGCTGGTTTTTTTTTTTTTTTTCAGTTTCTAAATCATTACTTTTTTATTTTGAAAGATTTGTCAAACCTCTTCAC  
 5 ACCGGGGCAAGAGTTTGCATGATTAATAAGAAGCAGTTTTTTCATGAAATGCTTGGAGGGGAACGAGT  
 TCTCAGCCTGTGAGATCCGACCATCCCATTGACTTTGAAATTTCTTTTGATTAATATAAAGAAAAAGTG  
 GGGAGGGGAGAAGAGGAGGAACATGCTAGCGACTGAAAGATCTCTGGTGACAGCCATCCAAATGTGA  
 AAAAAGAAAAACAGAAAACCCAAAAGAAAAACCAATTTGCCACCTGCCCTTTTCTGTTTTACCACGCTCT  
 10 GCTCCTCGCTCTTGTTTTTGTCTTTCTGGTTGAAACAGCCTCCCTGCCCTGCATCTCCTAAAGAAGTTTG  
 GAGGGGAGCACCCCTGCCGACCGGGGACC

>'990928a-063.scf' came from CONTIG 45 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-063.scf"(33>412)

TTTTTTTTTGGTAAGGTTGAATGCACTTTTGGTTTTTGGTTCATGTTTCAGTTGGTCAAAGATAAAAACTAA  
 15 GTTTGAGAGATGAATGCAAAGGAAAAAATATTTTCCAAAGTCCATGTGAAATTGTCTCCCATTTTTTG  
 GCTTTTCGGGGGTTTTCAGTTTGGGTTGTTTGTCTGTTTCCAGAGTCAGGGGCAAGTGGGTTGGGTGGGA  
 GGGAGCCAGGTTGGGGTGGAAGGAGTTTACAGGAAGCAGGCAGGGCCAACGTCGAAGCCGAATTCCT  
 GGTCTGNGGCGCCAACGTCCAAGGGGGCCACATCGATGATGGGCAAGCGGGAGGTCTTGTGTTTTTG  
 20 TATTCGATCACTGTCTTGCCCCACGCTCCGTGTGACT

>'990928a-064.scf' came from CONTIG 46 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-064.scf"(27>552)

TGCAGGTTTCGCTTAGGGGCAGACGGGCAAACAGAGCCAGCATGCCGGTCGCCCCGAGGTGGGTTTGT  
 25 CGCAAAACCTATGTGACCCCGCGGAGACCCTTCGAGAAGTCCCGCCTCGACCAAGAGCTGAAGCTGAT  
 CGGCGAGTATGGGCTCCGGAACAAACGTGAGGTCTGGAGGGTCAAATTCACCCTGGCCAAGATCCGA  
 AAGGCTGCCCCGGGAGCTGCTGACGCTGGATGAGAAAGACCCGCGGCGTCTGTTTCGAAGGTAATGCCCT  
 GTTGCGGCGGGTCGTCCGTATCGGGGTGCTGGATGAGGGCANGATGAAGCTGGATTACATCCTGNGCC  
 TGAAATTGAGGATTNTTGGAGAGACGCTGCAGACCCANGTCTTCAAGCTGGGCTGCNCAAGTCCA  
 30 TCCACCAGCCCGTGTGCTCATCCGCCACGCCACATCAGGTCCGAGCAAGGGGGACATCCCGTCTTCT  
 CGGCGCCTGACTCGCAAAACAATCGACTCTCCTGCCTCCCTCGCGGGGCCGC

>'990928a-068.scf' came from CONTIG 47 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-068.scf"(34>622)

GTGGATTATTATTAAATTTTATTATGGATGCACGTACAAAAAATGAAGAATAACGACACACAACA  
 35 CTATGGAGAATAATTTAAACAAATTTTCTGTGATAATGAAACCAAAGCCGCCACTTTATTATTGTTTG  
 TTGTGGATGATTTTATAAGGATGGAGGGGATGAGGATTCTGGAGCGGTAATCGAGCATGCTTGTTTTT  
 ATAAACAAAATCTAACGGAGGACCTGGAATTAGATTGCAAGTCAATATTTTTGTTCTAGAGTTATCA  
 TAGCGAAAGACCATATGACCAAACCATGGTATTTATTGACTTGACTAATATTGAAAAAATGGACCAGG  
 40 ACCAACCAAGAATAAGAAATATTGCTTTACAACAAATGAATTCAAAATTTATTTGGCTTTTTTTTACTT  
 TTAAATTTGAAGTCGTATGTTTTTTTAAAAAATTCAGAATGTACGTTTGCCTGTTTCCTTCTTTTCTT  
 TTGCATTTCAAAATTTGTGCTTTTATAAAGAGACTTGTTTCGAAAGCTTCTTATTTTGTGAGTTGTAA  
 GTCTTATTTGGGAACAATGTTTTGAATGGTAATAAAA

>'990928a-077.scf' came from CONTIG 48 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-077.scf"(39>465)

GCACGAGGCCGAAGACGTCTCTCGATGTCCAGCTGGCATTCTCCTCCGACTTCTCTCCAGCCGGGCCTCTCA  
 45 GAACATCACATATCACTGCAAGAATAGCATTGCATACATGGATCATGCCAGTGGGAATGTAAAGAAA  
 GCCTTGAAGCTGATGGGGATCAAATGAAGGTGAATTCAAGGCTGAAGGAAATAGCAAATTCACATAC  
 ACAGTTCTGGAGGATGTTTGCACAAAACACACTGGGGAATGGGGCAAACAGTCTTCCAGTATCAAA  
 50 CACGCAGGGCCGTCAGACTACCTATTGTAGATATTGCACCTTAGTATCGGGGGTCTGATCAAGATTT  
 GGTGCGGACATTGGGCCTGTTTGGTTTTTTTATACAAACTCTTCCAAGACCACAAAACTCACCTCCTA  
 TGCTTTTGTTTTATTTGTC

>'990928a-069.scf' came from CONTIG 48 at offset 164;"E:\SEQUENCE\export\EST\_db\990928a\990928a-069.scf"(34>497)

GGTGAATTCAAGGTTGAAGGAAATATTAAATTCACATACACAGTTGTGGAGGATGGTTGAACAAAAC  
 AACTGGGGAATGGGGGAAAACAGTCTTCCAGTATCAAACACGCAAGGACGACATACTACCTATTGTT  
 GATATTGCACCCTATGATATATGGGGCCTGATCAAGAATTTGGTGGGGACATTGGGCCTGTTTGCTTT  
 TTATATAACCAAATCTATCCTAAGTCCCAGAAAAAGCTTCACACTCCATATGTTGCTTTTGTCTAATCT  
 5 TGTGAGCCAGGACAAGCGACCAAGTTCCAGTTATTTATTTCCAAAATTCTTGGGAAAAAGNGCAATTT  
 GACCAAAAAGATATTTGTTTTGCTATTACCCCAATACAGTCAGAGCTTATTGTTTATTTTTTCCATTTT  
 AATTCAAAAAGCCTCATGCTGCTATAATAAAAAACTCACACTCTCCATACACT

>'990928a-070.scf' came from CONTIG 49 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
 10 070.scf"(34>475)

CGCGAGTGGCATATTGGTTGCTACCTTGCAGGCCTGTGCACCCTGGAACCTGCCCTAGAACTTTGTGTG  
 CTGGACTTGGGGAGGAGGAATCCTGGGGCTGGATACGTTCTTCTAAAAACTTCCCCCTTCAAGTGCA  
 AGAGCGGCATCTGGATCATTGAGGAGTGTGAGGGCAGGTTTCTGGCTCACAGGGACCTGCCGCACACA  
 TACCTGAGAATCAATCGCTTGCTCCTGTGCCATCTAGAGAGGTGTGGACACCTGATGACTGTGGAGAC  
 15 ACCACCAGGGGGAACGTAGCATTGTTACTGGCTGACTCCAGCAAGTCTGCGCATGGAGCTGCTGATGC  
 CCCCTTTCACTATCCTCCGGTCTTCACCTCCACGTATGAGATGACTACCTCTATATATAAACGNTAT  
 GANGCCACCTGCCTACTCCCCTCCACACAC

>'990928a-072.scf' came from CONTIG 50 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
 20 072.scf"(34>259)

GGTGAGCGTGTATGGGGGTGCCAGTCCCAGGAGAGAGGGGACAGAGAAGGACAGGCCTGTAGTCAT  
 TAGGATGGGCCTTCGTGCTGAGTAGCAATGTGTATACCATTTGGGCTATCAGAGGTACCCCTGGGCAG  
 GAGCCTCCACACACCCCTTCCCTCTTCTCTCCATGACTCTTCTCACATCCTATCTTCTTCTAAGAG  
 GGGGAGGGTAGGGGAAAATTT

>'990928a-075.scf' came from CONTIG 51 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
 25 075.scf"(34>577)

CACGGAAGACTGGGAGTCTGTTCTGGGGCCAGAAGATCCGGGCAGGTGTCCAGCCAACAGCTGACCG  
 CAGACTGCGTCTTGTCTCCGTTTCCGCAGGCACCATGAGCCAGAACACCGAGGTGGGCATGAAGGAAG  
 30 TGGAACTGAACGAGCTGGAACCCGAGAAGCAGCCGATGAACGCGGCGTGTGGGGCGGGGATGGCCGT  
 GGTGGTGGGGGGCGGCACCGAGAAGAATGGTCTGGTTAAGATCAAGGTGGGCGACGACGAGACGGAC  
 GCAGCGGCCGAGGCCAAGCTCACGGGCCTGTCTAAAGAGGAACTGTGAAGGTGGGGGGCAGCCCCGC  
 CTGGGTACGCACCCGCTGGGCGCTGCTGCTGGTCTTCTGGTTGGGTGGTGGGCTGCTGGCGCGCCCGG  
 GTCATCATTTGCAGCGCCACCCTGCGCGAGCTGCTACAGAATGAGGGCAAGGGGCCTCTACGCATTGA  
 35 ACCTCGGCCTCCTGGCCAGAGCAGCAACTACGACCTAAGAAGGAGGATACTAACCTGAGGAGGTTT  
 GGTGG

>'990928a-079.scf' came from CONTIG 52 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
 40 079.scf"(34>357)

TCTTGAAGATCTTTTTTGTGCAGTTCTTCTGTGTATTCTTGCCACCTCTTCTTAATATCTTCTGCTTCTAT  
 TAGGTCCATACCATTTCTGTCCTTTATCGAGCCCATCTTTGCATGAAATGTTCCCTTGGTATCTCTAATT  
 TTCTTGAAGAATCTCTAGTCTTCCCATTTCTGTTGTTTTCTTATATTTCTTTGTATTGATCTCTGAGGAA  
 GGCTTTCTTATCTCTTCTTGCTATTCTTTGGAACCTCTGCATTGAGATGCTTATATCTTTTCTTTCTCCTT  
 TGCTTTTGTCTTCTTCTTTTTCACAGCTATTTGTTAGGCC

>'990928a-083.scf' came from CONTIG 53 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
 45 083.scf"(41>427)

GCACGAGGAAACCGTGGTGAACCGGGTCTGCGGGTGTGTTGGTCTGCTGGTGTGTTGGCCCAAG  
 AGGTCCCAAGTGGCCCAAGGTATTCGAGGTGACAAGGGAGAGCCTGGTGATAAGGGTCCAGAGGT  
 50 CTTCCTGGCTTAAAGGGACACAATGGGTTGCAAGGTCTCCCGGGTCTTGCTGGTCATCATGGCGATCA  
 AGGTGCTCCCGGTGCTGTGGGGTCCCGCTGGTCCCAGGGGGCCTGCTGGTCCTTCTGGCCCCGCTGGCA  
 AAGACGCGCATGGACACCTNNNNGCAGTGGACTGCTGGCATTCGTGCTCTCANGGTAGCCAAGTCCT  
 GCTGGCCTCCTGTCCCCCTGCCCTTCTGGACTCTGCCAGGNGGGGGG

>'990928a-084.scf' came from CONTIG 54 at offset 0;"E:\SEQUENCE\export\EST\_db\990928a\990928a-  
 55 084.scf"(36>436)





>'991015a-012.scf' came from CONTIG 5 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-012.scf"(41>316)  
TGCTGGGCCCGGAGCGGCAGCGGGTGCAGGGGGAGCTGCAGTCCCTGAGCCAGCGGCTACAGCAGGA  
GTTTGTGCCCATGGCCGGAGGCGCAGGACCAGCTACAGCAGTTGGGGAGGAGTGTGGGGCTGCGTGA  
CATGAGAACTTGTCCCTGGAAAATCTGGCCCAACCGAGAAGGCTTGTGGAAGCCGCTGGGCTTTTTTG  
TTCAGATGTGTTCTGGGGGTGGGGGTGGCTGGTCTCTGACCTGGGTGGGTCAGGGGAGTGTGGG  
GACGGT

>'991015a-013.scf' came from CONTIG 6 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-013.scf"(49>665)  
GCACGAGGGGCCCTATGGCCAGTGCAAGCTGCTGCGCACGCACAACCTACCTGTACGCGGCTGCGAGT  
GCAAGGCCGGATGGCGGGGCTGGGGCTGCACGGACAGTGCAGGACGCGCTCACCTACGGGTTCAGCT  
GCTGTCCACACTACTGCTCTGCCTGAGCAACCTCATGTTTTTGCCACCCGTGGTCTGGCCATTTCGGAG  
CCGATATGTGCTGGAAGCGGCAGTCTATACCTTCACCATGTTCTTCTCCACGTTCTACCATGCCTGTGA  
CCAGCCTGGCATTGTGGTTTTCTGCATCATGGACTATGATGTGCTGCAGTTCTGTGACTTCCTGGGCTC  
CTTATGTCCGGTGGGTGACTGTTATTGCCATGGCTCGCTTTACAGCCTGTGGCAAGCAAGTGTATATT  
GCTGGGGCGATGCTGCTGGCATGGTTCTGAGCTTGACGGATGGACTCTGGACCTGTTGGACCGAGCTT  
TTTGTCTGGGATTTGGCACAGCCGGAAGAACCAAGGCGCCGCGGGCTGTTCCCCCCCCAAGGGCGGTGG  
TTTTTGCTGGCCGGCAGCCTCGAAGAGGCATCTGCGTTGTTGTGAGACGAAAACATTAATTAACATTG  
A

>'991015a-015.scf' came from CONTIG 7 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-015.scf"(44>735)  
TTCGGCACGAGGGAAGAATTTAGCTGCTGCGTATGACAACTTTGTTGAACTTGTGGCTAATTTGAAGG  
AGGGCACAAAGTTTTACAATGAGCTGACTGAAATACTTGTTCAGGTTCCAGAACAAATGCAGTGATATA  
GTGTTTGACCGGAAGACAGAAAGGGATGAACTCTTAAAGGACTTGCAACAAAGCATTGCCAGAGAAC  
CTAGTGCTCCTTCAATCCCAACACCCACATACCAGTCTCTCCAGCTGGGGGGCAGCAGCAACGCCA  
CCAACTCCAGCAGCAACGAACCATGCGCGCTACTAAGCCCCAGCCCCAGCCGACCTCCACCTCCTGT  
GCTGCCAGCAAATCGAACTCCTGCTTCAGCTCCGGCTGCAGCTCTAGCTCCAGCCCCGGCTCCGGCAG  
GCTCTGGGACCACTGTACCAGCTCCATCACAGACNCCCGGGTCAGCTCCCCCTGCCTCAGGCCCAGGAC  
CCCCGCACCCACCTTCCAGGGATCCCGGGATTGCAATGCCATGCCCTGGGCTACATCCCTAGCGGAT  
GGCAGATATATGCGGATCCACAGGATACAAAACCTGGCAGCTCCTACCCGACCCACACTCTACCTC  
CTCACCCCCACACCTATTCCCAAAAAAAGCAGTAAAAACAATGTATTAAAGAAAAACAACCGCAA  
AGACACCTTACTTG

>'991015a-022.scf' came from CONTIG 8 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-022.scf"(48>641)  
GCACGAGGATCGTCTTTAAACCCTGCGTGGCAATCCCTGACGCACCGCCGTGATGCCCAGGGAAGACA  
GGGCGACCTGGAAGTCCAACCTACTTCTTAAAGATCATCCAACCTTCTGGATGATTATCCAAAATGCTTCA  
TTGTGGGAGCAGACAACGTGGGCTCCAAGCAGATGCAGCAGATCCGCATGTCCCTCCGCGGGAAGGC  
TGTGGTGTGATGGGCAAGAACCGATGATGCGCAAGGCCATCCGAGGGCATCTGGAACAAACCCG  
GCTCTGGAGAACTGTTGCCTCACATCCGGGGGAATGGGGGCTTCGTGTTACCAAGGAGGACCTCAT  
GAGATCAGGACATGCTGCTGGCCAACAAGGGGCAGCTGCGGCCCGCTGTGGCCTAGGCCCGGGGAA  
GGCACTGTGCCAGACAGACACTGGGCTGGGGCCGAGAGAACCTCTCTCAGCTTTTAGCTAACACAAA  
AATTACAGGGCACAATGAATCTGATGAGGGCACTGATAAGAAGGAGAAAAGAAGCGCAGCAGCAGCTG  
TGACTGCGACATTCCCTCTCTTGGCTGGCTTCACAGGTTGAAGGAGAAAAAAA

>'991015a-025.scf' came from CONTIG 9 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-025.scf"(42>669)  
TTTTTTTTTTTTTTTCAACAAACAACAAATATTTATTGAGCGCCTATTATGTGCCAGGCACTGTTCTAGAA  
TCCCCCCCCAAAAAAGAAAAACAAGATAGATGCAGAAAATGCAAATTCTGAGGGAGAGGAAAGGGGT  
CGTTGAGGAAGAAGGCTGAGGGGATTAAAAAGCCTAAGGTGATAGGGACTTGGCCTTAGGCCTCCTCT  
TCGGCCTCCTCACCGAAATCCTCTTCTCTTCTGCGGTGGCATCCTGGTACTGCTGGTACTCGGAGACG  
AGGTCGTTTCATGTTGCTCTCAGCCTCGGTGAACTCCATCTCGTCCATGCCCTCACCTGTGTACCCAGTG  
GAGGAAGGCCTTCCGGGGAACATGGCCGTGAACTGCTCCGAGATGCGCTTGAACAGCTCCTGGATGGT  
GTGCTGTTGCCATGAAGGTGACTGCCATTTTATACCACGNGGGGGATGTCGCAACAGTTGTTTGACGT



GTGGGGTCCATTACGAAAACTGTGTTTTATCTGACGTGAGCTTGCTCTTTACTCCTCTTGGACTCGC  
CCAGAACACAGCCCGGGAGACCGCCTGCGGGGCAAGGCGCTCTGTCTTGGTCGAAATGTGGGAGCC  
AGACGGGGGCCGGA

5 >'991015a-028.scf' came from CONTIG 10 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-  
028.scf"(42>718)  
CCGCTCCGGAGCTGCTGCCGCTCCTGCTCTCAGCGCTGCAGTGGAAGGCAGGGCCGCGCCGCGCCGCT  
CCTTTTTGAAATATATAAAATTGGAGGCCGGCCGCTCGGCGCGCCCTCTGACAGCGCGGGCCGCG  
CCCCCTCCCGCGCGCGCCGCTGCCAGCCCCGGGACCTTTTCATCTCTTTCTTTTTGGGCGGAGGAG  
10 GCGAGTTTAGATTCGCCACTCCGGACCCGAAATTGACACACTGAACTCCGTTTTCTTCTGCTAAATTAT  
TTCTGCTTAATAGCCACTCGTTTTTTTTTCTGTCCCCCTCCCCTCCATCTCGTTGCTTCAAGAAAACCT  
TGGCGACTCCCTAAGTGCAGGTTTCCCTGGCCGGCGTGTTTTATTTTTTCATTTGGGGAACGAGTTGGTT  
TTTTTTTGAAGAATTTAGATAGATACTTTTTTTTTTGGCCTTGATTGATTGTTGCAAAGTTTGATTAAA  
TAAATTTACTGTTTGTGTTTGAAGTGTGGGTTTTTTTTTTTTTTTTTTTTTAAATAAAATTTTTACTTTAA  
15 ATGTTATGTGGTGGGCGTTTTTTGTTTGGCGGGTTACTGTTCTTTCACCGTTGCCTTCTGCAAGTGGGT  
GGGGGCATTGATTTATTCCCCCAAATCCCCCGGGTCCGGGTTCTCACA

>'991015a-029.scf' came from CONTIG 10 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-  
029.scf"(42>653)  
20 CCGCTCCGGAGCTGCTGCCGCTCCTGCTCTCAGCGCTGCAGTGGAAGGCAGGGCCGCGCCGCGCCGCT  
CCTTTTTGAAATATATAAAATGGAGCCGGCCGGCCCTCGGCGCGCCCTCTGACAGCGCGGGCCGCGCCC  
CTCCCGCCGGCGCGCCCGCTGCCAGCCCCGGGACCTTTTCATCTCTTTCTTTTGGGCGGAGGAGCCGA  
GTTTCAGATTCGCCACTCCGCACCCGAAACTGACACACTGAACTTCGTTTCTCTCTGCTAAATTTATTTT  
25 TGCTAATAGCCACTCGTCTTTTTTTTCCGCCCCCCTTCCCTCCCTTCGCTGCTCCAGAAAACCTTTT  
GCCGACTTCCTCAGTGCAGGTTCCCCCTGCCCGTGGTGGATTATATTTCACTTGGGAACGACGTGGGC  
TTTTTTTTTGAAGGGATTCAAGCAAGATCTTTTTTTTTTGGCATTGGCTCTCGATGGTTGCAAAGTTGGC  
ATTAATAAATATTCCTGTCTGGACTTGGGAGTGTGGGTTTTTTTTTTTTTTTTTTTTTTTAAATAAA  
AATTTTTTTCCCTTTAAAAAGCCTTTTGGGGTGGGGGGTTTTGGTCTGTTTGGTCGGG

30 >'991015a-030.scf' came from CONTIG 11 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-  
030.scf"(46>759)  
GGCACGAGGGAGATGTTTCGAGCCCGGCCGATGCACCGCGTGGGGGCGCTCGCGGCCATAACTACC  
TGCAGACCCAGCGGCCCGGAGCTCCGCGAGGCCGCGCAGCGCTTCCGCGCTGGCAGGCCAGCGC  
CCAGACTGGTTCGAACTGGAGAACCTCCGCTCAGCGGACGGCCGGGACCTCCCGTCCCTGGACGAGGA  
35 GGCTTCGAGGAGGAGCCGCTGCCCGAAGAGGGATCGTCCGCGCAGGAGCCGCTGGTGGCGGAGCCCA  
CCTCCCGGGACCACTGCTGGTGGGAGCTGCTCCTCGCTGGAGAAGGAGGGGGCGGGCTGGGGCGGG  
TGGAGCCCCAACCCCGGGCCCGGGGAGCCGGCAGCCCCAACGCTCCATACATGGTGGTCCGGGGGG  
AAGGTCCCTCGGGCTAGGAAGGGAGCCCGTCCACAGGAGTGGGAGCGGGCTGGCGGGTGGCCTAATG  
AGGGAAAGAGCCTGCCGCTTTGGGAGCCAGGACCCGGGGAAAAGTCCTTTCTTTTCGAGGGGGTCCG  
40 ACCCACTGAACCAACTCAAAATGCACCCCGGGGGAAGGGGTGGGAGCGGAAGTTTTTCAGAC  
CCCCACCCCAAAAAAAAAAAGAGGGGGGGGGGAGGGGGGGTCCCGCGGAAACGCACCCCT  
GGTTTTATATAAAACCCCTGCCGGGCTGGGCTCCCCCCCCCT

>'991015a-040.scf' came from CONTIG 12 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-  
040.scf"(47>728)  
45 GCACGAGGGTTAGAAAAAGAATACATGATTCTAGAGTTGCTGGTTTTAACCTGCACTACAGTTAATC  
CTGACGAGGACAGACAAAACCTTAAACAAAAAACTTGGCCAAAGCAAATAACTTCTTAAACAGTCAA  
GATCTTGAGACTCTAGAGGATTTTTGTACTAGTAGCCCAAGGAAGATGGAAAAATGACTCCTTTTTTA  
AATCTGATTCACTGTCACTGCTTTGGGAAACTGCTAAATTGTTGGATCTGCTTCCAGGGTCTATGCA  
50 TCTCTTGTTCAGCATGAATTTAATTAGTAGTCCAAGCCAGACTGTTCTCTGGAACCTGACTAATCCAT  
ATTTCTATGTTTTGGAATTAGCTTGCTCCTCTAAATCTCCACAGCCTAATATTGATGTTATTATGA  
CAGGGAAGCCTGAGGAGAAGCCTATACTGTGTGGACTTTAATTATATTCTAGAATAACTTTTGGGGAA  
AGCTCNCTGTAGCTGATTCTAGATTATCCAGAAAACAATTAACCTTTAATAAACTATTTGTCTAATCCC  
CTCTATTATATCAGGATACTATTTAATATTAGATATTATTATTAACAAACATCTATGGTTTTTGTATCTA  
55 GGGGTTGATTTTACGTCCGCAAAAACCATAAAGCAACCATCATAAAAAAGCAAAGCCTTATCTG>'9910

15a-044.scf came from CONTIG 13 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-044.scf"(47>695)

GCACGAGGGCCGAACGCAACGAGCTTCGCAGGAGGCGGTGGGAGCGACGGCGGGGGGCTGAGCTTTG  
GGGCGACCCCGCTTCCCTCCTCCCAATCGCTTCGCTTCCCTTCCCCGCGGGCAGCATGAAAGCCTTCAG  
TCCAGGGAGGTGCGTTAGGAAAAACAGCCTTTCGACCACGGCCTGGGCATCTCCCGGAGCGAAACC  
CCGGGGGACGACCCGATGAGGCTGCTGTGCAACATGAACGACTGGTACTCCAAGCTCAAGGAGCGGG  
GGCCCAACATACCGCAAAAAAGAAGGAGAGCAAGAGGAAATGCTGGAGGACGAGATCGACTACATC  
TTGGACTTGAGATCGCGCTGGACTCGCAACCCCCATTCTGTTAGCCGGGCCACCAACGACCCGACAGAC  
CGGCGTCCAGGACGCGCTACCAACTCAACACGACATAGATCTGGCCTGCAGAAAACCCCTCCCCCGCG  
AGCCGGGAAGCGGAGCAGGCGAGGGCCTAGGCTCATTAATAAAGATAAATTTTATACTTCTGTTTGT  
TAAAAAATAAATGTGGGAAGAAGGGGGAATGTAATATAAAAAAGCCCAACGATTAATAAAGGGG  
GGGAATGGGAAAAAATTTTTTAAGTTTTCTTTGGGGAGGGG

>991015a-046.scf came from CONTIG 14 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-046.scf"(47>699)

GCCCCGAGGGCCAGTTTCTCAGTGAACATGCAGGAAGTTCAAACGCCTTCTCTAGTGGAGAGCATACCA  
ATTACTATTTTGATGTTTCTCATGAACACCTAGAAGGTGCGCTAGACAGATTTGCACAGTTTTCTCTGT  
GCCCCCTTGGTTGATGAGAGCTGCAAGACAGAGAGGTGAATGCAGTTGATTCATAACATGAGATGAAT  
GTGATGAACGATGCCTGGAGACTCTTTCAGCTGGAAAAAGCTACAGGGAATCCCAAACATCCCTTCAG  
TATATTTGGAACAGGTAACAAATATACTCTAGAGACTAGACCGAACCAAGAAGCATTGGATGTAGAC  
AAGAGCTCCTGAATTCCATTCTATTTATATTCATCGAACTTATGGTATTTGTGTTTTAGCCGAGATCTT  
TGATGATTTGCTATCTGGTGGGAAGGTATTTGTGAAGAGAGACAAAATGCCCCGTGCCGATTTCCGAC  
ATCTTTCCAAGAAATCTTAACACTTTCAAAATACCCATTAGTTTTAGATCTTTGGACATCCCTCCTGCTC  
CCAAACACAACAACCCGCCTTTCCGCTCCTTGGCAGAGGCCGAGCGTTTAACCTATAAAGCGGGAATT  
TTGGGGGAAGGAGGACGGGGTGTTTTTTTTTTTGGGGT

>991015a-047.scf came from CONTIG 15 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-047.scf"(47>625)

GCACGAGGACATTCATGTCTACTTAGTTCCTTTTCTCCACCCAGTACCAATCACTTTAATTTTCCAAGTT  
GTATTAGCTTCCAGGCACCTGCATTTCAAGGTAGCATGCTTTGCTGGCTCCCTACTCCCCGCTCCATCT  
GCAAGAATAGGTCTGGTACACTGTGAGTCCTTCTAACTCCATGATGAATCACAGATACTGCCATATT  
CATGACATTGTAAATGGCCACCCCTAGTCACCATGTCAATGACCTCTTTGTCAAGCTTTCCCTGGTCTT  
GCTGACCATTTCAGCTCTATTTTAGATACAGTGTCCAGTCTGTCTCCAGCCAGGAACACCCCAAAG  
CCCACTGGTTAAATCTCTGCGTGCTCTCGAAACCTTACATTGTATTCAATTTTCCATTGCATCATTGTCT  
ATACATATCAATATCATGAAATCAATCCTGCTTATAAAGAACCATCTTTACATAACAGATATAAATTA  
ACCTTCAGATTATACTGACTAAACAGAAAAATCCTGTGAGCCTCTTATTTCATTGATCTTACGGGATACC  
TGTGTTTTTCATTCTTATACTCAGCTTT

>991015a-048.scf came from CONTIG 16 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-048.scf"(47>653)

GCACGAGGTTGCGGCCCACCTGGTGTACTGGGGCAAGGCCATCATCATCTACCCGCTGTGTGAAAACA  
ACGTCTACATGCTGTCTCCCAACGCCAGCGTGTGTCTGTATTCCCCGCTCGCCGAGCAGTTCTCACGCC  
AGTTTCCATCTCACGACCTGCCATCTGTCCTTGCCAAGTTCTCCTTGCTGTCTCCTTGTGCAAAATCAG  
GAACCCCTGGCCCCCCTGTTTCAGGAGACGCAGCTCATCCAGATGGTGGTGTGGATGCTGCAGCGCC  
GGCTCCTGGTGCAGCTGCACACCTACGTCTGCCTGATGGCCTCGCCAGCGAGGACGAGCCCCGCGCC  
CGCGAGGACGACGCGCCCTCGCCACCAGGGTGGGCGGCCGAGCCTCAGCACACCCAAGCCCTCAG  
CTNTGGCTCCCCACCAGCAGCGATGACATGACCCTACCAGCCCCAGCATGGACAACCTCAGCGCTGACT  
GCTCCCCAGCGGGACTCGGCGCTGACAGGAGATGACGGAGACCTGCTGCCACCTGTCCGACACGAC  
NGCCCGCATCTCACGGCCTCGGCCANAACCCGAGACCCCGATGCTGCAGCTCTGCCTATTCC

>991015a-049.scf came from CONTIG 17 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-049.scf"(41>656)

GTAATCTTCACATTCATTTTAGCAGGTAAGTGTATATATAAATAAGTGTATTGTTTGATT  
TTTAGACCACCACATGACATGCTTGACTATTATTCAAATGTCTGTAAATGCAAAGTAGGCTACTCCAT  
AATAGTGTTAAGAACAACAACTTACTAACAAGTGATATAAAGACTTAAATTAACACATTATGTGGAGC  
CCTATCTTTACAAAAGTTTTCTACTGTAAATGCTTTTACTTTTATTGTCAGTTTTTCATTGATAGTATTC



GACGGACGTCCACGGGCTGATTGACAGGTCACTGCAGGCTTCAGAACCGTCACCAAAAGCCCAAGAC  
CTGAAAGAGTTGGGCTGATTGGGGCTCCCCAACGGGGATGGCCTACCGC

>'991015a-061.scf' came from CONTIG 22 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-  
061.scf"(48>697)

GCACGAGGCTTTTTTTTTTTTTTGGTAAGGTTGAATGCACCTTTTGGTTTTTGGTCATGTTTCAGTTGGTCAA  
AGATAAAACTAAGTTTGAGAGATGAATGCAAAGGAAAAAATATTTCCAAAGTCCATGTGAAATT  
GTCTCCCATTTTTTGGCTTTTCGGGGGTTTCAGTTTGGGTGTTTGTCTGTTTCCAGAGTCAGGGGCAAG  
TGGGTTGGGTGGGAGGGAGCCAGGTTGGGGTGGAAGGAGTTTACAGGAAGCAGGCAGGGCCAACGTC  
GAAGCCGAATTCTGGTCTGGGGCGCCAACGTCCAAGGGGGCCACATCGATGATGGGCAAGCGGGAG  
GTCTTGGTGGTTTTGTATTTTCGATCACTGTCTTGCCCCAGCTCCGGGGTGACTCGTGCAGCCATCGTAG  
TGACGCTGTAGGTGAGCGGCTGTGCCCTCGCCCGATCTCGATCTCGTTGGAGCCCTGGAGAGCAGGCC  
TCTTGAGGTGCAGTTGCTGGTCTGTAGCCAGCTTTTGCAGGTAGGGAGTTTGGGAGCTCGNGGAACA  
GCGCAGAAGCAGTGGAGCAATCGAGATCGACCCGGCGCTACCGACGATCGCGCAGCTCGCGACAACC  
GCTTTTTTGGTTTTTGTACCATTTTGCCCCCGCGGGG

>'991015a-069.scf' came from CONTIG 23 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-  
069.scf"(48>644)

GCACGAGGCTCTCGTGTAAGGACTGACTACCTGGACCGATCGCCTGACAGATCCCACCTGCCTGCCCA  
CTGCCATGACTGAGCCCAGCCCCAGCCCGGTCCATTGCCAGCATTCTCTGTCTCCTCGTCGGTCTGTT  
CCACCACCTTCAGGGTCTTGCTTTGTCCACTCGTGTGTGACCTTAGTCTCTAGGCTTTACCAGAAGCA  
GTCTGGGTTTCAGCCAGTCAGTGACTGGCGGGTTTGAATCTGCACTTGTCCCCACCATCTGGGGACTCCC  
CTTTCCCCGTTGTTCAGGACTCCCCATGTGTGTCAGTGCTCTGCCCTCACCTGCCCAAGACTCACCCC  
CCTTCCCCCTCTGCAGGCCGACGGCAGGAGGACAGTCGGGTGATGGTGTATTCTGCCCTGCGCATCCCA  
CCCGAGGACTGAGGGAACCTTGNNNNGGACCTGNNGCTGGGGTGCCCTCCTGATCTCCTCGCCCTG  
TATTTTCTTCATCTNCAGNTCTGGACAGGCAGNGGGCCAGAAAAGGNACCTANTTACCATTGCGNGGA  
GATGAGTCATGGAGGTCAAGGGAGACGACTCTGATTTCAGACCCCCCTC

>'991015a-077.scf' came from CONTIG 24 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-  
077.scf"(42>659)

TCGAGTTTAGGAG  
CCCCATCAATAGAAAAAACATAAAGGAAAAGGCAAACCTACGACTACGAAAGGGCAGAATCAGGCA  
GGGGCTTCAAAGCCGAAGGGGGGGGTAAAAATAAAAAGAAATTTAATGGGGGGAAGAAGCAGACA  
ATTAAGAAGGGGGACCCAAGGGGGGACGGGGGGGCCGGGGAAGCCGGGGGCTACAAAAAAGGGGAG  
CCGAAAACCCCGCGGAGATAGGAAAAGGGGCTTCATAGTATTTTGAGGCTGGGAGGAGTGGGAAGG  
AAACCCCTAAGGGATGGGGAAAAAAGGGGCTGGAATATAGCTTTCGGTCCCCTTCTATTAAACATGAG  
GGGCCCAGGAAAAAACTCCGGAGCCAAAGGACAGAGGGGGGGGCAGGGGGACTTCAGGGGGGGA  
GGGGGGAAGCCCGGGGGGGGCAACCCCGCTAGTCGGGGGGGGGGGGGCTGGGGGGAAAAACAAAA  
AACCGGAAAAAAACCTGGGAAAAAAATAATTCAAAAGGGGCTTTGGGCACGGGGGGGGGCCTG  
GAGGGCTTCTGGT

>'991015a-086.scf' came from CONTIG 25 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-  
086.scf"(44>139)

TATTCGGCACGAGGGGAAAAAGTCATGTGATAAAATACTCCTTTTGTCTATAACCAAGCCCCAACCA  
GGACAAATTATGATATATACTGCAGGGG

>'991015a-087.scf' came from CONTIG 26 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-  
087.scf"(44>525)

CGCTCTCAAGGGGCGGGCGGGGCTCCACTTGGGTGCTCCTAGAGCGGTGCCCGAAAGTGTGCACAGTC  
TCGTCTGTGTGCGTGTGGATAATATCCTGTGTGTCATAGAAATCTGGCTTCATAAAACCATAGAATAAGTT  
TCTGGTATGAANGGTCCCTTCTCTGTAGCTCTTCACTTGACGCCACAAGACCATAACCAAGTGGGAGT  
TCGCTGATCGAAAAAGCACCTTCTTGGTAGAACCCGGGAAGGAACACCACGCTCGCCTGAGGGCCCTG  
AAGGGTCTCCTCTATAAAGCGCTCACAGACTTGGTGTGCACCCCTGAAATGAACCAAGAATTGTGCGA  
CTTGAACGGGGAGGTGTGGAGGGCCGGTTTGACTTCAGATTTCTCTGCTGCCGTGTTCTTCTGGAGGGG  
GACCCTTTCCAAACCTCAGAACGACACACAAGGGGCGGCCTGCGAAGAACGCTGCGGAATGAAGCAT  
CTCT

>'991015a-089.scf' came from CONTIG 27 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-089.scf"(50>609)

GCACGAGGATACAACAGCTTCCAGATGCACTTGGACAGCCAACAGTTTTTGAATGACCTCAGAAATGA  
TATTGAGAAGAAAATAGGATTTGATGCTATTATGCGGGTTCGCACCAGCACAGTTTCAGAGCCACTG  
ACTTCTTTGGGGGCATTTATATGAACAACACCACCGACGTAGAGATGGCAGCAATCGACTGTGACAAG  
GCCGTGACCGTGGAGTTCAAGCATGATGACAAGCTCAGTGAAGACACTGGAGCCTTGATTCAAGTGTGC  
CGTGCTCTACACAACCTGTCAGCGGTCAGAGACGACTTCGGATTCAACAACCTGGGCTTGAACCTGCAGCT  
TCCAAGTGCGGGATCTGTATAAGAGCTGCGAGACAGATGCCCTCATCACTTTTTTTGCAAGGCAGCTTT  
AAAGGCGTTTTTACCAACCTGAAGTCATTGGGAAATTTTGGTTACCAGACTGNACATGTTGGCTGTT  
ACGGAGACTGGCTAGCCCTCGCACCGCCAGTGATTTGCGATTATAAGTCTGCGNGTACTGACTGTTG  
TGAGACTGGTGTGT

>'991015a-095.scf' came from CONTIG 28 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-095.scf"(46>593)

TTCAGACAGCTGGTGCCGAAGTTTCAGGAACATCCTCCTCTCTCCAATCATGGCTTGTGGTCTGGTCGC  
CAGCAACCCTGAATCTCAAACCTGGGGAGTGCCTCAGAGTGCGGGGCGAGGTGGCCGCAGACGCCAA  
GAGCTTCTTGCTGAACCTGGGCAAAGACGACAACAACCTGTGCCTCCACTTCAACCCTCGTTTCAACG  
CGCATGGGGACGTCAACACCATCGTGTGTAACAGCAAGGACGCTGGGGCCTGGGGGGCCGAGCAAAG  
GGAATCTGCCTTCCCCTTCCAGCTGGAAGTGTGCTGGAGGTATGCATCCTCTTAACCAGACGNACCTA  
ACCATCAAGCTGCCTGAGGATACGAATTCAGTTCCCCAACCGCCTCACCTGGAGCCATCACTACCTGC  
TGCANGTNGGACTCAGATCNGAGGGGTGGCTTTGAGGACTATGGCCAGCAGCCCTGGCCCCATAAG  
GAGTGCCTGGCTCCCCTGAAAAAAAAAAAAAAAAAAAAAAAAAACTGAGGGGCCCCGACCCAT  
CCCTTAAG

>'991015a-096.scf' came from CONTIG 29 at offset 0;"E:\SEQUENCE\export\EST\_db\991015a\991015a-096.scf"(43>550)

TGGAATACACAGCTGGGGCGGTGATGGCGTGCCTAACGGTTGTTTGTCTACCTTTTGGGCCAAGG  
GAGGGACGCAGCCCCGTCAAGTATCCGCCCGCTTTCAGCCTTACTGCCTTTTATGCCACGGAGCCCCCG  
AAGGGCCGAAAGCCGGAGGGCCGCGGCCCTGGGCCCCCCGGCACCTGTGCAGCAGGCTTGCCTGAG  
CCCGGGTTGGGCTGGCGGCTTCTTTCTGTGGGCTCCCGGTCCCGGTTCGGGTTTTTCAGGCCGCACCT  
ACCGGCGGAGGAGGGATGGGGGACTTTGGGTGGCCCTTTTCCAGTGACGAGGTAGCTGACGATGGC  
GTATGCCATATGTGGAAGGATGAACATCTTTCCGAATTTACATTAAAAGATTAAAAGGATTGGTGGGA  
GGGATTACGCGCCCCCTCATGTCCCCAGGAAGTGCCCCATATACATGGGGGCACCCCAACGGGAATCT  
GGGGATGGCTGGAACCGGGCCCCCGGTGCTGGG

>'991108a-001.scf' came from CONTIG 1 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-001.scf"(58>663)

GCACGAGGGTTTAAAAGACCGAGTCCAGTATGGGGGGGGAAGTGAGAGGCAATGGAGAAAAGCCAG  
AGGTCAGGAAGACAGCTCACGAGGAGGGAGGAGAGGTCTGCCTGAGCTCTGCAGATTCTTGAGCAG  
GGGGAATGGAGAGGCAGCCAGGGGACCCCTTATAAACAAAAGATGGCCAACACTGGTCAACACCACT  
GGAAGGGAAAGCCCCGGGGAACACTCATCTTCACTTTCAAAACATGGGTAGAAGACCATTGTGAAAG  
ATATTAAGAAGAACCGCTCAATCAAGGACATTACTAATATTACCATGTAGATGAATAAAAACAACTG  
AACAGATCTAATGGAGATCCTTGGCCTGGCTTTGAAGAGATGGTTTTAAATTCCGGGACACCATTCTC  
CTGNACCCATACTCTCCAGTTAGGTTAGCTGAAAGGAAAAATGCCTCTCCTAGAAGGGAGGCATAACA  
CAACCTGGCGGGCAGCAGAATTTCCCTGAAAAAAAATTACATTGCTGTGCTAAAAATCACTTCTTTGTT  
GTTCTCTCCAGCCCCCCCCGCCACGCCGTTTAAGGGGAGAAAAATGAAAAACAAAAATTAGCCTTT

>'991108a-002.scf' came from CONTIG 2 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-002.scf"(53>440)

ATTCCTTAGTCTTCTCATTTCTTGAATCATTTTCATTCTTCCTCAGCACTGCAGCATCCTTTGCAGCATTC  
ATTAAGGGGTTTCCTTTAAATACAACAGAAAGAAAAAAAATTCAAACAAAAATTGAGTTCTTTCAA  
ATGAACCTAAGTACAGCTCATTATAGCTTCCCTCCAGTTGTTTGGGGGAAATTGACTCCAGGTATTTATA  
AAACAACACCCATGGAAGCAAAAAAAGCTGAAGCTTGAGAGAACCTGATAAGGGAGAAGTTACAAA  
AGTTATCAGAACAGCTTTTGGCCTTTTGACCTGGGAAATTAAGAGCAATCCAGGGGGGTTGGGAGA  
GGGCTGGATGGGACAAGGGCCCCACCTGGGGGGCACTGGCCAGGGG

>'991108a-004.scf' came from CONTIG 3 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-004.scf"(57>453)

GCACGAGGGTGGAGTTCGTCTCCGCACGCGTGACCGCGCTGGGATGGATTCTCTCTCGTCTTCCTCCGC  
GGCGGGGTTTGGGCTCGGTAGACCCGCAGCTGCAGCATTTTCATTGAGGTGGAGACTCAAAAAACAACGC  
TTTCAGCAGCTGGTGCACCAAATGACGGAACTTTGTTGGGAAAAGGGCATGGACAAGCCTGGGCCAA  
AAGTGGACAGGCGGGCTGAGAGCCTGGTTTGTGAACTGCGGTGAACGCTTCATTGACACCAACCAAAT  
CATTTTGAATCGACGGAACAAAACCACAAATCCAACCAAGCCTCTCAAAAAGCTTTCTGACTGACTCA  
CATTATCTTTTGTAAAGAAGGAGATCAAGAAATGAAAGCAGTGATGGGGAGTGTAG

>'991108a-005.scf' came from CONTIG 4 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-005.scf"(58>458)

CACGAGGCAGGCTCTAACCCCTCACATTCCTGGCGAACCTCCATACTGCCCCGGCATCTTTGCCCTG  
CCTGCCTGCCCTGCCCTGTCCACTTGGGGGTTTGCTCCAGTATCCTATGTTGGGCTCTTGGGATCTTTTC  
TTTTTCCCTTTGTCTTGGGCCGGGAAGGTCCCCTTGGGCATGTCCCCTTCAACCAGGTTAAGCTCTTG  
GCCTTGATGGATGACTAGAAGGTGGTGTGGATAGAAAACCCGTGGTCCGATGGGGGGCCGTGGTTACC  
CTGTGGGTATGCATATCCCCGGTCCAGTGGGTAGTTTAGTAGATATTTTGAATGATGTGTTCTAGATG  
CAAACCGTACACAAGGAGGGGTGCTGGGCACGAAATACCCCTGCCAAATCCCAC

>'991108a-007.scf' came from CONTIG 5 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-007.scf"(1>610)

CACGGGGGGCCGTAAATATGGTCCCCCGGCTGAGAATTCGCCGAGCAAAGCCACAGGTCTACCTTGC  
CCCCAGTCCTCACAGCCGCTCTACCCAAGGGCCCCAGTTTGGGGGCATCACAGCTGTCAACCGCAACC  
AGAGCCTGCTGAGCCCCCTCAAGCTGGAGGTGGATCCCAACATCCAGGCCGGCCGCACCCAGGAGAA  
GGAGCAGATCAAGACCCTCAACAACAAATTTGCCTCCTTCATCGACAAGGTGCGGCACCTGGAGCAGC  
AGAACAAGGGTCTGGAGACCAAATGGAACCTCCTGCAGCAACAGAACTGCCCGGAGCACATAAACA  
ACATGTTTGAGAGCTACATTAACAACCTCCGGCGGCAGCTGGAACCTTTGGCCAGAAAACTGAACTGGA  
AGTGAAGCTGGCACATGCAGGGCGGGGAGGACTTCAGACAAAATGAGATAAAAAACAAACGCCAGAA  
TGAGATGATTTGTATATCAAAAGATGGGTGAACTAATGACAGGAAAATGAGTCGCCTGAGGCGATGA  
GAATAAATCTCAGCACGGTGAAAGAATCGAAAGAATCAATTTTAACTCGGCCGTCTGACAACCCACCG  
ACT

>'991108a-009.scf' came from CONTIG 6 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-009.scf"(54>586)

GCACGAGGCAGGACGTACCTTGCACGACTTGGACGTGGCCAACGCACGGCCCCAGGGGGGACAAGA  
CATCCTGTCTATGATGGGCCAGCTCATGAAGCCCAAGAAGACGGAGATCACAGATAAACTGCGGGGG  
GAGATCAACAAGGTGGTGAACAAGTACATCGACCAGGGCGTGGCCGAGCTGGTCCCCGGCGGTGCTGT  
TCGTGGACGAGGTCCACATGCTGGACATCGAGTGCTTCACCTACCTGCACCGCGCGCTCGAGTCCTCC  
ATCGCGCCCATCGTCATCTTCGCGTCCAACCGCAGCACTGCGTCATCAGGGCACGAGGACGTACCTC  
TCCTCACGCATCCTCTCGACCTCTGACCGAGGATGATCATCCGGACCTGCTGTACACCCGCAGAGATA  
AACANATATAAAATTCGAGCCANACAAGGGATCACATCAGGAGAAGCGCTGACCACTGGGAGATGGA  
ACAAACCACTGAGTACCGGCACTGCTGCCCCGCACTGTGGCAGATACGGAAGAGGATGAGA

>'991108a-011.scf' came from CONTIG 7 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-011.scf"(55>597)

GCACGAGGGGAAGGGAGATTGCTTTCTCTACTGCATCTGTAAATCCTTTATCCAGAAGTCCCCCTGAA  
ACTTCTTCACAGATGACTCCTAATCCATTACTTTTAAAGTCCTACCAAGAACTAATGGAAGAAATTTCT  
GAATCTGTTGGAAGAATCAATTTACTTCTGAAAGTACACATTTGAACATTGGTCATAGGTCTATGGGT  
CATAGCATGAATATTGAATGTAAAGGGATTGATAAAGAGCTAAATGATTCTAAACTACACATATAGA  
TATTTCAAGAATAAACTCTTCTCTGGGAAAAAGCCAAGTTTGACTTCTGAATCCAGTATTCATACAATT  
ACCCCTTCAGTTGTAACTTCACTAGTTTATTTTATAACAAGCCCTTTCTGAANCTTGGTGCAGTATCTG  
CATCTGACAACACTGCCAGTTGCTGANAGCCTAGCACTACTTGACAGTCCAACCCCTANAAAAA  
AAAACGGACGCAGCCACTCACCGGGCCCCGCTGTCTGCTCGCCAGACTTCTACACTATGNC

>'991108a-012.scf' came from CONTIG 8 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-012.scf"(55>244)

GCACGAGGCCCAAGTGCAGGAGAAGCAGCACCCAGTGCCCCACCGACTCAAAACCAAACCAGGTG  
CGCCCCGCTGGGGGCCCCGGGGCCTCTGACACTGAAAGAGGTGGAGGAGCTGGAGCAGCTGACGCA  
GAAGCTGATGCAGGACATGGAGCATCTCAGAAGCAGAGTGTGCCCATCAACGAGT

5 >'991108a-058.scf' came from CONTIG 8 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-  
058.scf"(53>714)  
GCACGAGGCCCAAGTGCAGGAGAAGCAGCACCCAGTGCCCCACCGACTCAAAACCAAACCAGGTG  
CGCCCCGCTGGGGGCCCCGGGGCCTCTGACACTGTAAGAGGTGGAGGAGCTGGAGCAGCTGACGCA  
CTGATGCAGGACATGGAGCATCTCAGAAGCAGAGTGTGCCCATCAACGAGTCCTGTGGCCGGTGTCA  
10 TCAGCCCCTGGCAGGTTTCGACGCCCGCGGGTTCGCGCTCTGGGGCAGCTCTTCCACATCACCTGCTTCAC  
CTGCCGCCAGTGTGAGCAGCAGCTCCAAGGCCAGCAGTTCTACAGCCTGGAGGGGGGCTCCGTACTGT  
GAGGGCTGCTACACCGACACCCCTGGAGAGTGCAGCACCTGTGGGCAGCCGATCACTGACCGCATGCTG  
AGGGCCACAGGCAGNCCTACCACCCGCATGCTTCACCTGTGTGTCTGCGCCTGCCCTGGAGGCACCT  
CTTATTGTGGACAAGCCACCGCCCACTGGCCCCGACTACACAGCATAACCCCCAAAGCTTGGGCGCGG  
15 ACCATATGCGACCTGCCGCGGGAGACGCGCGGGGCTTGACAGACTCCATAAGGTAAGGGCAGACGGG  
GAGCCTTCATGAGGAGAACGCGTTTCTGGTGCCCGTTGGGGAGGCCACCCGAC

>'991108a-013.scf' came from CONTIG 9 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-  
013.scf"(55>115)  
20 GCACGAGGCAACTGTCAGAGAAACATGATGGGGTGAAGGTGGGTGCTTTTTTATAAATCGT

>'991108a-014.scf' came from CONTIG 10 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-  
014.scf"(53>744)  
25 GCACGAGGACCACACAGCCCCTCCTTTCTGATGGCTCTCAACTCTCCATCCCACAGACTCACACCT  
CTGAGACCTGCAAAAGAAGCTCGCGGTTTCAGTCCCCAGGGGGGACCAGGGTTGTGGGGGGGACC  
GTTGGATATGTTTGAAGCGGTACTCGTACCGGCTTCACATTTTGTGTCAACAATTACTGTATTTTTTT  
TTTTTTTTTACTTTTCTGTACCAGTTTGTCTATAATTTATCAGAAGGTCCAAAAAGTTCGACATAACTA  
TTTCAGTTTGCATTATTTATTTATGATGCTTTTGTCTTTTATACATTTGGGATTATAAATTATG  
TAAATGTTAAATGAGCATCTCAAAGAAGTCTGTTAAATCATGGCCGGGGTGGGGGAAAAAATAAAA  
30 AACAGTTTTATTTTTAAAAAGGGGGACCCAGTTTTAATGATCAAAGTTATAAATCAGAAATCCTGTA  
ACCACTTCCTAAAAAAAGGACCACAAATAACCGATTTTTTTTATTACTCCTTGCCCAAGGGGCTCTATG  
CGACACCCTTTTTTAAAAAGGCGCTCTTTTTTAACAACTCTGTTTCGCTTGCCCCGGGACCACAGGTTCTTC  
GGTCTACCAAAATATTAATTTTTTCCAAAAACAACCCCTGTTTTTGACCTTACCTATTCTTTTTGTGCC  
A

>'991108a-015.scf' came from CONTIG 11 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-  
015.scf"(49>678)  
TGGCTCCGCCACGAGCTCTGGGACCCGGGTCTGTGGCCGGCCCCCTCGCTGGCCCTGTCTCCCAGCGAC  
GGGCAGCTACTGGGCCGGGGATTCTGAGCTTTGCTGCTCTCTTTGCACGTGACATGATGTCCCCCTC  
40 CACAGCTCCTGGAGGACCGGCTGCTGCTGCTGCTCTTCTCTGTGGCAGTCAGAGAATCTTGGCAG  
ACAGAAGAGAAAACATGCGACCTGGTGGGAGAAAAGGGTAAAGAATCAGAGAAAAGAGTTGGCTCTC  
CTGAAGAGGCTGACACCGCTATTTAACAAAAGCTTTGAGAGCACCGTAGGCCAGAGCCGACATGT  
ACAGCTATGTGTTCCGGGTGTGCCGAGAAGCTGGCAACCACTCCTCTGGGGCAGGCCTGGTGCAGATC  
AACAAAAGTACGGGAAGAGACGGTAGTTGGGAAATTACGAAACTAAATCTCATGGAGGAATGGATC  
45 AGCTGACTATAAAGGGGATGAATAGACAACACGTGGCAGGAGCACGGGGCAGGGGAGATCTCCGC  
ACGACCACCTACGACAATTTACCGGTTGAGACGACCAAAACCAATGTTTACCTTTAAGAAGCGCCGGG  
GGCCCAAACCCCCCTAGGGGT

>'991108a-016.scf' came from CONTIG 12 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-  
016.scf"(48>563)  
50 TTTTTATATTAGTTTTGTAATCCCTACATTGGAAAGCTTTCCAAATTCTACTTGCATTTAAATAAACTG  
TTGCAGTTTTTACTATTTATTTTGTTCCTATGGTTTAAAGAAAATAACTGCACAGTTTCAAAGGCATGG  
AAAATTATATCAGCCTTTATGTACTCTGTTCCCAAAATGGCAGGGTCTAGAGAAGAGCAGAATTCAG  
CTTTAGAAAACATTCTAAGATTTACGCATGCAGTTNTGACATATCTGAAAATAAGACTTTTGTATATT  
55 TGTGGTGGAGGNGGNTGGGGAACTTTTACAAAATGNTNNATTTTTGTCACTCTGTGGGCATTTACA  
TATTTTTATTGCATTAGATTTGGTATTATGTGCACATTATATATTACTTCTTGTGTTGATTTGTGATTC



CCTATACTTGATTTTTTAGTAACTTTTTATAAAGAACTGCTCTTTTTTTTAATTGATTGCGCTCAGAT  
GAGCCCGAGTCAAAAGCAACATCAATGACAT

>'991108a-017.scf' came from CONTIG 13 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-  
017.scf"(54>489)

GCACGAGGCTTAAACAGAAGACGGGCCCCAGGCATTGTTGAACTGTCTCGTGCCCTCTCCTTGGATCTT  
GGATCTTGGTTTTCCTCGGTAGGAGTTTCTGTCCCAGAGGCATTGAGGTGCATTTTTTTTTCTCCTCCCG  
TGAAGGAGGTTCCAAACCTATTCTGGTTTTTTTCTACCTTGTGTCATTGTATCTCTCCTTTCCTTGT  
CTCTTTTATGTTTTTTTTTTCTTTTCTTTTTTGGTTGTTTGTCTTCTCCATCAGTGGGGACTGATTGTT  
CCCCTTGCCGGCCAAATTTTGTCTTCCCTGTTTTGGCCAAATCCTAGGGGNGNAAAATCCTCGTAT  
GCCAAAAATATATGCTGAGCATAAGTCATTCCACGTGGGTGTCCATCGCAGCCGAGAAGCTGCAGNG  
GGGGCAGGGAGNNGGCGC

>'991108a-022.scf' came from CONTIG 14 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-  
022.scf"(54>474)

GCACGAGGGCGTGGTCCACGCCGAGCGATAGAGACGCCTCGGCCGTGTCTTCAGGATGACGGAGTGG  
GAAACAGCTGCACCTGCAGTAGCTGTAGACCCCCGACATTAAGCTTTTTGGAAAGTGGAGCACCGATG  
ACGTGCAGATCAATGACATTTCTCTGCAGGATTACATTGCTGTCAAGTATAAGTATGCCAAGTACCTAC  
CCCACAGCGCGGGCCGCTATGCGGTCAATCGCTTTCGTAAGGCACAGTGCCCCATTGTGGAGGGCCTC  
ACCAACTCCATGTTGTTGCTTGGCCGGAACATTGTCTAGAAGCTTCATGACCGTGCGCATCGTCTAGCT  
CGCCTTTTTTATCTTCCATTTTCTTACTTGTCTGATCTCCCTTTGTTCCCTGTTGATCGTCTTCTTAACTG  
GTGCCCCGT

>'991108a-026.scf' came from CONTIG 15 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-  
026.scf"(48>461)

CGCCAGGACACAGGTGTCGTGAAAACACCGTTAAACCTAAACCAAATGGGAAAGGAGAAGACCCA  
CATCAACATCGTTGTCAATTGGGGCACGTAGATTGAGGGGAAAGTCTACCACGACTGGCCATCTGATCT  
ACAAATGTGGCGGGGATCGACAAGAGAACAATTGAAAAGGTCGAGAAAGAGGCTGCCGAGATGGGA  
AAGGGCTCCTTCAAATATGCCTGGGTCTTGGACAACTTAAAGCTGAACGTGAGCGCGGGGATCACCA  
TTGATATTTCCCTGTGGAAATTTTGGAGACAACAAGACTATTTTCCATCATTGATTGCCCCAGACACA  
CAGACTTCTTCTAAACATGATTATCAGCACATCCCAGCTGACTGTTGCTGTCTGCTCGGTTGGTGTG  
TGTGTG

>'991108a-040.scf' came from CONTIG 16 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-  
040.scf"(54>397)

GCACGAGGCAGGACCTGAAGGATCACATGCGAGAAGGCTGGGGACGTCTGTTACGCAGATGTGCAGA  
AAGATGGAATGGGGATGGTTGAGGTATCTCAAAAAGAAGACATGGAATATGCCCTGCGTAAACTGG  
ATGAAACCAAATTCGCTCTCATGGAGGTGAAACATCCTACATCCGAGTTTATCCAGAGAGAAGCACC  
AGCTATGGCTATTTACGTCTCGGTCTGGGGTGGAGGGGCCGGGACTTCTCCTCCAAAGCAAGGGGT  
CCCACACCTCTTTTCTTCTTTTCTACCCTACTGAACAGNNGGTGGGGATTTTTTTTTTTTTTTTAGTGG  
ACT

>'991108a-027.scf' came from CONTIG 16 at offset 317;"E:\SEQUENCE\export\EST\_db\991108a\991108a-  
027.scf"(52>486)

TTTTTTTTTTTTTTTTTTGTAGAGCCGGGAACCTTAGGGGCCACGAGAAGCGCACCAGCCACCGTTTCG  
TTTTTTTTCATCACCGGATAACACCCGGGGAGGACCGAGGTTAATAGCTTGGTGAGCATGCATCTTTAA  
CCAGGATCAACGGTNGACGGAACGATACCCACGGATACTCCGGTGATAGATGGGGATGAGGACATT  
ACCTTCTTAAAGAGGTACCATTTCTGACCCACTGTAAACCTTGATTAATTGCGGACCTGTGTTACA  
GATGAGACACGATTTATTTCTGCCTTTGAACACTACTTGAGCTGATCCTTTCTTGTGTGGGGCGAGCA  
GGTAGTACAATGCTCTGGGAAAGTGAAGGGTCTAGCATGCGTGNGTGTGCTCTATTCTTCTCAATA  
ATCTGAGTTTAGATATAGCGGGGC

>'991108a-031.scf' came from CONTIG 17 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-  
031.scf"(48>385)

CTGGTGTGAAGATCAATCCCAAGAACTACACTGATAATGAATTGGAAAAGATCACAAGGAGGTTTAC  
CATGGAGCTGGCCAAGAAGGGCTTTATTGGCCCTGGCGTCGATGTGCCCGCCCCCGACATGAGCACCG

GCGAGCGGGAGATGTCCTGGATCGCCGACACCTACGCCAGCACCATAGGACACTATGATATTAATGCC  
CACGCCTGTGTTACTGGTAAGCCCATCAGTCAGGGTGGAATCCACGGACGGATCTCTGCTACCGGCCG  
GGGAGTGTTCCATGGGATTGAAAACCTTCATCAATGAGGCTTCTTACATGAGTATTTTATGAATGACA

5 >'991108a-032.scf' came from CONTIG 18 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-032.scf"(53>555)

ACCTCATTCTGACAAAAGATTAAATCTTGTCAGAATGAGGTGATAGATAAAATTAATCAAATGCGCG  
TGATTTAAGACGCAATCTCACTTTGCAGGAACGAAAGCTCTGGCGATATCTTCGCAGCCGACGTTTA  
GTGATTTCAAATTTGCGCGTCAACATCCAGTGGGGAGCTACATTCTCGATTTTGCTTGCTGCTCGGCGC  
10 GTGTAGTCGTTGAGCTGGATGGTGGGCAGCATGATTTAACAGTTGCCTATGATTCCAGGCGCACTAGC  
TGGCTTGAGTCGCAGGGCTGGACCGTGCTGCGTTTCTGGAATAACGAGATTGATTGTAATGAGGAGAC  
GGNGCTGGAGATATTCTGCAGGAACCTGACCGCCGNCACCTCTCCCTGAAGAGCGAGGGGCAGACC  
GAGCCGATAGCGNTGTGGGAAAACATGAGACGGGCTGGAGATATCGCAGGGCTGACCGCCACCACGC  
CAGAAAGGTAGGGCGGTGAACGTTGTGT

15 >'991108a-033.scf' came from CONTIG 19 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-033.scf"(8>608)

GGCGTTAAATATGGATCCCCCGGCTGAGAATTCGCCGAGCGAAGCAAAAGAACCCTGTCTCCTAAGCT  
AAGCCAAGCAAAGCTTGAAGCCAAGAAGCAGGTTGAAAGGTGTCCACAGCCACAAAAAAGAAG  
20 ATCCGGACGTCGCCACCTTCCGGCGGCCCAAACACTGCGGCTCAGGAGGCAGCCAAATACCCTCG  
GAAGAGCGCGCCTAAGAGAAAACAACTTGACCACTATGCCATCATCAAATCCCCCTCACCACCGAGT  
CAGCCATGAAGAAAATAGAAGACAACAACACTGGTATTTATTGTGGACGNCAAGGCCAACAAGCA  
CCAATTAACAGGCTGTGAAGAACTCTTGACATTGACGTGGTTATGTCATACTTGATCAGCCTGATGG  
AGAGAAAAGATATGTTGACGGGCTCTTCTATGATGCTGGATGTTGNNCACAATGCATATCTAACTGA  
25 GTCATGCTATTNCAATTAAGTTTACTTTAAAAAATAAGGGGGCCGACCCATTTCGCC  
TTGGAGTGATACATTACTGNCGGTTTCAGCGGATGGGAAAACCTGGTACCATTTCCTGAC

>'991108a-034.scf' came from CONTIG 20 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-034.scf"(54>619)

GCACGAGGGTGCAGTCTCTGAGTGGAGGGAGGGCCGACCAGCGTATCTCCGTCTCCCTGGGGAAAGG  
30 TGCTGGTGAGGTGACGACATGGCCTGGTGGAAAGCTTGGGTTGAACAAGAGGGCGTCTCAGTGAAG  
GGCAGCCCCCACTTCAACCCACACCCTGACGCANAGACCCTCTACAAAGCCATGAAGGGGATTGGGA  
CCAACGAGCAGGCCATCATCGACGTGCTCACGAAGAGAAGCAACGCACAGCGGCAGCAGATCGCCAA  
GTCCTTCAAGCTCAGTTTGGCAGGATCTCATCGAGACCTTGAAAGCGAGCTGAGTGGGCAGTTGAGAG  
35 GCTCATCATATCCTCATGTACCCCATACAGAACGAAGCCANGAGCTATATGATGCCATGAGGNCATA  
GAACCAAGAGGGCATCATCNAATTCTGGCTCTCGGACCAGAACCACTCAGAGATATGAAGCATAACAG  
AGACTATGGTCACCTGAAGAAACACAACAACACACGCTACTGAAGATCGNGGCCTCTGCGCACAAAG  
ACTGAGTATGGGACAGATGCCCCGAAGC

40 >'991108a-035.scf' came from CONTIG 21 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-035.scf"(48>532)

TTTTACATGAAGCTACTCATATCAAGAGCAATAATCAGTCTTACAGCCAGACAGACTGTCAGTCCTCA  
AACTTGACTGTAAGTACCTGACCATCTCCCTTTTCTCTCCAGACAATTGATGATTCCTTATTTTAATC  
GAGGAGTGTCTGCTTTTCAACTACCCCTCCATGTCATACAAAACCCAACCATTTATAAACAATAGTTT  
45 TATATCTAGGTTATTGCTTTTTGATAGCACATCCATGTGTATTATTACTTTCTTTTATTCTTAACATC  
TGAATGGAGTATTTTCGTGGAAAGCTACAGCTCTGTTCACTTTTTGCTTCTACACTTTGCAGATGCATG  
GTATTANGCACTGCCTCTTTTACATCTCTGATCATAATGCAGAGATTTTCTTGACACAAAGCAGAT  
TATGATTCCTTCCACGAGGACACTTACTAGATGCTTGCTCGCCCGCCTATGTAGGATAGATCCATC

50 >'991108a-036.scf' came from CONTIG 22 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-036.scf"(48>649)

CGTCTGAAGATTTTCTATTGCTGTCAAGTGCCACCTCATTGGGCCATTACGCGCCAACTTGCAGGTTTA  
CTCTTTGAGTTGGGATGTACCAATTCAGCCCTTCAGATATTTGAGAAGCTAGAAATGTGGGAAGATGT  
TGTCATTTGCTATGAAAGAGCTGNGCAGCATGGGAAGGCAGAAAGAAATCCTGAGGCAAGAGCTGGAG  
55 AAAAAGGAAACGCCAAGTCTATACTGCTTGCTCGGAGATGTCCTTCGAGACCACTCTTACTATGACCA  
GGCCTGGGAGTTGTCTCGACCCGAGTGCTCGAGCCAGCGCTCCAAAGGCCTCCTCCACCTGCGAAA



CAATTTCAATTTCAAAATGTCTGAATGGTGCTATAATATATAAACTTCAACACTCTTCCAATAACACTG  
CGTTACATTCTTTGAATCCTAGCCCATTTCAGAGCATGACGGNGCTTACCATTAATAATTACCTTTCTT  
CTGAAACAGGCAAGCAAGAAATAGAAAAGACTTGCCTGTCAACTAACTCACCCGGCAGAACTAAAGA  
ATTCTTGAGGCCAAAAAGAAAATTGTACGAATGGCCAACTAAGTTCTAAAAATTGTTTAAAAAA

5 >'991108a-045.scf' came from CONTIG 28 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-045.scf"(54>653)

GCACGAGGATACGGCGTTGTCTTGAATTCCTGTCGTAACCTAAAGGGAAGCTTTCACAATGTCCGGAG  
CCCTTGATGTCCTGCAAATGAAGGAGGAGGATGTCCTCAAATTCCTTGCAGCAGGAACCCACTTATGT  
10 GGCACCAACCTTGACTTCCAAATGGAACAGTACATCTACAAAAGGAAAAGTGATGGCATCTACATCAT  
AAATCTGAAGAGGACGTGGGAGAAGCTTCTGTTGGCCGCTCGGGCCATTGTGCGCCATTGAAAACCCGG  
CTGATGTCAGTGTCTATCCTCCAGGAATACTGGCCAGCGAGCTGTGCTGGAGTTTGCTGCTGCCACTG  
GAGCCACTCCTATCGCTGGCCGCTTCACTCNCGGAACCTTCACTACCANATCCAAGCCGCATCAAGGA  
CCAAGCTTTGNGGTCACCCGATCCCAGGCTGACCACACCCCTCACGAAGCTTTACGGAAACTGCCACC  
15 ATGCCCTGGCACACGACTCTCTTGGCTCGTGGCATGGCTCCGGCACACAGGACGCCTANGGGTGAGGG  
GGAGCTGCCGGAGCCTGGCGGGCACATCTCGAACACCGGGAGCTGCGACTTCTTT

>'991108a-046.scf' came from CONTIG 29 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-046.scf"(54>638)

GCACGAGGCGCAGACTGGTTGCGCGCCTCTTTTTCTTCGCTGCCTCCCAGTTCTAGATTAACCGGCGCC  
20 ATGGGTTTTGGAGACTTGAAAAGCCCCGCTGGCCTCCAGGTGCTCAACGACTACTTGGCGGACAAGAG  
TTACATAGAGGGGTATGTGCCATCACAAGCAGATGTAGCAGTGTGTTGAAGCCGTCTCCGGCCCCACCAC  
CTGCCGACTTGTTGTCATGCCCTCCGTTGGTATAATCATATCAAATCCTATGAGAAGGAAAAGGCCAGC  
CTGCCAGGAGTGAAGAAAGCTTTGGGCAAGTATGGCCCTGCTTATGGGGGAGACACCACAGAAAGTG  
25 GAGCTACAGATAGTAAAGATGATGACGACATTGATCTTTTGGATCTGATGATGAAGAGAAAGNGAAG  
AANNCAAGAGATAAGAAAATACGCCTTGCCAGATGAGTAAAGAAAAGCAAAAACCACACTTGTGCGCAA  
GTCTCCTCTTATTTACAGAAACTGGATGAGAGACGAATGCAAACCTAAGAGGGGCAGACATCAAGCAA  
GCTGGGCGGGCTCTTTACAATCGGTGGTGCATAAAAAACAAACAG

30 >'991108a-047.scf' came from CONTIG 30 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-047.scf"(48>612)

CAGTGACCCAACTGCGGCAGATGCTGGAGAATCAGAAGAACTCCTCTGTGCCCCCTGGCTGAGCATTT  
GCAGGGTAAAGAAGCATTTGAGAAAAAAGTTGGGAATCATTAAAAGCTAGCTTGAGAGAAAAGGAAA  
GAGAAAGCCAAAAACAAACTGAAGAAGTCTTCCAACTCCCATCTGAGATTCAAAAACTTAAACAAG  
35 CCGTTAAAAAATTAAAGACTCGGGAGGTGGGTGATTTGTGCGAAATATAAAGCAACGAAAAGCGNATT  
GGAGACACAGATTTTCGACTTTATACGAAAATTGGCCAATCTGATAGGAAGTATGAGGAAGTATGGAG  
GAGGGTTTTTCATGCCCAAAAAGAAGAACTGTCTGCTAAGATGAGAAGAATTGCTCCATTTACATAN  
AGCAAGAAACAAAGATCAGCAGAACGATGTGACAATCCTTCACACCATCACGAGCTACAAAAAATA  
CAGATCTGCCAACAAATCAAACAAANAATAAATACTGACGCTCAGAGTGAGAGATAAACGGCTCATGC  
40 CTTCCACTCCCATGAAGGAGCCACAG

>'991108a-049.scf' came from CONTIG 31 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-049.scf"(54>370)

GCACGAGGGGAAAGATCCTGCACATTGACTTTGGGGGACTGCTTTGAGGTTGCTATGACCCAGAGAGAA  
45 ATTCCCAGAGAAAAATCCATTTAGNACTAACANGAATGCTGACCAATGCTATGGGAGGTCACGGGGC  
CTTGATGGCAACTACAGGATCACGTGCCACACCGCGATGGGAGGTGCTCCGGGAGCACAGGACAGC  
GGCATGGGCGCGCTGGGAGCCTTCGTCTATGACCCCTGCTGGACTGGAGGGTGGAGGGGCACCAATAC  
CAAAGGGAACAAGCGATCACGGACGAAGACAGAATCCTACTCTGCT

50 >'991108a-050.scf' came from CONTIG 32 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-050.scf"(48>566)

GTCGTGGGCTCACACCCGGCTTCTCTTCAGCCTTAACCTGTGCGCCGCCATCGCCGTCATGCTAGGCGC  
CGCTGTCCGCCGCTGCTCTGTAGCTGCAGCCGAGTCGCCCCGGCCAGCCCTCGAGGCCTCCTGCACC  
CCACTCCGGCCCCCGGCCAAGCCGCCGCTGTCCAGTCACTTCGCTGCTACTCCCATGGGTACATGAG  
55 ACAGACGAAGAGTTTGATGCTCGTGGGTGACATACTTCAATAAGCCAGATATTGATGCTGGGGATTGC  
GGTAAGGGATGAACACACTGNNTGCTTGANCTGGNTCCAGAGCCAAAAATCATGATGCTGCTTGCGGC

ATGCGAACGTTTAAATGATTTGTAGNGCAGTCGCATCTAAAAGTGGTAAGACAAAACAGAACTATAAG  
AATCTACCCTTGTATTGAGAACTATACAACTTGATGACTGGAATTCAGTCAAGAACGGCCTGAAAGGT  
AACCCAGATGACTCCAGACTATGAATGTATGATTAATAACGAA

5 >'991108a-051.scf' came from CONTIG 33 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-051.scf"(48>407)

CTCTTTTGAGTGCACCGTGAGTGATGTGTGTCATGCCTCTGGGGTGGAGGGAAGGGACCGACACAGAC  
GTACACTCCCACACTCCACCTGGTGAAAAAGGATGCCTGGACGAAGGTGGGTTCGGACCTTGGTCCTT  
GTGTGTGTAATGCCTTTGTGTCTGATACCAATGTATGGGCGGTTTCCAGCTGATATGGGTCCTGCCTCC  
10 CCTACCTTCCAACCCCACTACACGCTGTACCCAGTATGACCCCTCTTTCTTAATGCCATGGAATG  
TGGGATNTCGGGCACCCACACTGTCCGCACGCCTCTTCTATTCGCACTGTTGCCTCTCCTCAACCATTA  
ATCCTAACGGCCACATG

15 >'991108a-052.scf' came from CONTIG 34 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-052.scf"(54>747)

GCACGAGGGCTGACTATTCTCAACCAACCATAAAGATATTGGGTACCCTTTATCTACTATCTTGGCGCT  
TGGGCCCCGCATAGCAAGAAACAGGTTCTTTAGCCCTTTGTAATTTTCGGCGCTTGAATTAGGCCACCC  
CGGAACCTCTGCTGGGGAGACGACCCAAATCTACAACGGAGGTTGGAACCGCACACGCATTTGTAATA  
ATCTTTCTTCATAGTAATACCAATCATAATTGGAGGATTTCGGTAACTGACTTGTTCCTTAAATTAATT  
20 GTTGCTCCCGATATAGCATTTCCTCGAATAAATAATTATAAGCTTCTGACTCCTCCCTCCCTCATTCCTA  
CTACTTCCTCGCCTCCTCTTTAGTTGAAGGTGGGGCAGGAACAGGCTGAACCGTGTTCCTCCTTACA  
GGCAACCTTCCCAGCGGGAGCTTCTGTAAATTTACCTTTTTTCTTACCCTTTACAGGAGTTTCTCAT  
TTTTAGGACCTCACTTCTTTTCATCTTTTAACATAAGCCCCCGCAGTAACATAACCAACCCCTGTGGTT  
GTTCTGATATTCCGCGGTCTTTTCTTTTGTCTGTTTTCAGCGGTTCTAGTTCTTACGACGAACCAATA  
25 CCCCTTCGCCGGGGAGGGAACCTTTTTCTCCCTTTCTTCTGACCCGACTTTTTATCTCCGGCCGGG

>'991108a-081.scf' came from CONTIG 34 at offset 10;"E:\SEQUENCE\export\EST\_db\991108a\991108a-081.scf"(47>736)

TGACTATTCTCAACCAACCATAAAGATATTGGGTACCCTTTATCTACTATTTGGTGCTTGGGCCGATATA  
30 GTAGGAACAGCTCTAAGCCTTCTAATTCGCGCTGAATTAGGCCAACCCGGAACCTGCTCGGAGACGA  
CCAAATCTACAACGTAGTTGTAACCGCACACGCATTTGTAATAATCTTCTTCATAGTAATACCAATCAT  
AATTGGAGGATTTCGGTAACTGACTTGTTCCTTAAATAATTGGTGCTCCCGATATAGCATTTCCTCGAAT  
AAATAATATAAGCTTCTGACTCCTCCCTCCCTCATTCCTTACTACTCCTCGCATCCTCTATAGTTGAAGC  
35 TGGGGCAGGAACAGGCTGAACCGTGTACCCTCCCTTATCAGCCAACCTAGCCATGCAGGAGCTTTAGA  
GATCTAACCATTTTTCTTTAACTTAGCAGTAGTTTCTCATTTTTTAGGAGCCATCAACTATTAAAAAA  
TTTTAAATTACAGCCCCCGCAAGCCACAATACCACACCCTTCGGTTGTTGAATCCGTATAATTACGGCG  
TCCTCTAATATTTTCGCTTCTGTTTTACAGTCGCTTCACAGTCTTTAACGACCGAACTTAATCAACCTTT  
GCCCGCGTGGGGGAACCTTTTTTTTTACCTTATTTGTTTTGGCCCCCGTATCTTTTTATTAAACGGT

40 >'991108a-054.scf' came from CONTIG 35 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-054.scf"(47>642)

TCAGGACAGCTACTGTAACCTCATCCTGAGGCTCATGTACGCATCTTTTCCTGAGACTCAAAACAACA  
AAACAGGGACTTAGATTTGGAACTGACTTGGTCTGATGAACCAGACCTGTCTGAGCCTGCATGCCAG  
45 GAGCTGATCAGCTCCTCTGACTTGCAAATCTAAGTTTGTCTTTTCTTATAAGATGTGTGATCCCTGC  
AGTCTCTAATCCCCAGATGGAGGCCCCACTCAGGTTATCATCTTCAGATGGGGCTTCCCAGGTGAC  
GCTAGTGGTAAAGAACAGCCTGCCAATGCAGGAGACGTAAGAGACATGAGTTCAATCCCTGGCTGG  
ANAAGATCCCCTGGAGAAGGAAATGGNCACCCATTCCAGTATTCTTNCCTGGAAAATCCATGGACATA  
NGAGCCTGGGGGCGCAGATGGGAGATGACGNAGTGAATAACATAGCAGNCAGAATGGCAGGCATATT  
ACTATACACAAANGCTCAATGGNGAACACTGTCTGAACCTTCTGCTTGTATACACAGAATCATATAT  
50 ACCACACACCCATTTACGAGAAAAGTGATTTATCCAGACCCGACACCGCTC

>'991108a-057.scf' came from CONTIG 36 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-057.scf"(53>131)

55 GCACGAGGAGCCGCTTCATTCTGCCCATCGGTGCCACGGTCAACATGGACGGTGCCGCCCTCTTCCAG  
TGTGTGGCTGC

>'991108a-060.scf' came from CONTIG 37 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-060.scf"(194>353)  
 ATGGCTTTGTGGGGATTCCTACTTTTCTGACTAGGGTATTGGATTCCATACCCCCTGGCAGTGAAAAG  
 CCTAGAGTCCTAACCACTGGACCACAGGGAATTGCCTATTTTTTTTAGGGCTGAAAACCTAAATAGA  
 5 TGATGAATATACTTAAGCAGGAG

>'991108a-061.scf' came from CONTIG 38 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-061.scf"(47>637)  
 TGGAGACTGGTGTCTCAAACCTGGCATGGTGGTCACCTTTGCTCCAGTCAATGTAACAACCTGAAGTG  
 10 AAGTCTGTAAAATGCACCATGAAGCATTGATGAAGCCCTTCCTGGGACATGTGGGCTTTAATGTCAAA  
 AACGTGTCTGTCAAAGATGTCCGTCGTGGCAATGTGGCGTGGTGACAGCAAAAATGATCCACCCATGG  
 AAGCTGCTGGCTTCACAGCTCAAGTGATTATTTTGAACCATCCANGCCAAATCAGTGCTGGATATGCA  
 CCTGTGCTGGATTGTACACAGCTCACATTGCTGCCAGATTGCTGAACTGAAGGAGAGATTGATCGNC  
 GGTTCTGGAaaaaaactggaagatgaccctaattncttgaaatctggggacgctgcATCGNTGTATGGGT  
 15 CCTGGCAGCCATGGNGNGAGAGCTCTCTGATTATCCTCCCTGGCCGCTTGCTGGCGNGACAGAGAAGA  
 CAGCGCTGGGGGGATCCAGCANGGACAAAGCAGCTGAGCTGCAGGCACAGNCGCCAAAGCCAAAG  
 ATAAAGAAATATCCCATACTGCCCCCCTATAGGGGAAGACGGCCAACT

>'991108a-063.scf' came from CONTIG 39 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-063.scf"(47>551)  
 CTTGGTTGTGTCTGGAAATCACCCCCGTGCAGCTGTCCTTCATGTGCAGGAGTGTTGCCCCAGTGCTGG  
 20 TGCAGAGGTGACTGTTTCTGGCAGGGTGTGCCAGGGCTTCACAGAGGAGCCTTTTTTCTTCCCCA  
 GAAATGTCTCAGTGAAGAAGGGGGCAGGACAGGTGGCCTTGGGGACAGAAAGCAGACTAGACTTGCT  
 GTCATACTGGAAGCTGGCCCTGTCTCAGCACATAAGCAGCATTGGGAGCAGTCAAGCCTGGCATCCC  
 25 TGAATTGGGGTTCAGGGGGTGTGCCAGGTGCCCTCATGTCCCCACCCCTCAGACTGCTGCACCCCA  
 GACTGGGATGCTAGCCAGGGACACAGACCTACATGTGTGTGTGCCCTGGTGTGCATGTGTGCCTGTGG  
 GGCTGTGGGGATGGTCAAGCTCTGCCTGCCCTCTGTCTGAGCCATCTTGTGGACTTGATTGCGCTT  
 AGGAGGTGGTCTGGTGTATGGGGGGGAG

>'991108a-064.scf' came from CONTIG 40 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-064.scf"(47>445)  
 CGCTGGGGAAAGGGCCTTTAATCGCGAGAGTTCGGTTCTCTTGAGAGCGCCTCCGCCGGCGCCTAGAT  
 30 CGCGCGAGACCGCGGAAGGAACCGAAGCGTGTGGCGCGCGCGCGGCCGCGACGGGAACAAGATGG  
 CGACGGCGACCATAGCGCTACAGGTCAATGGCCAGCAAGGAGGGGGGTCCGAGCCGCGCAGCAGCGGC  
 35 GGCGGCGGCGGCAGTGGTGGCAGCGGGAGACAAATGGAACCTCCACAGGGGACAGACTCCATCAAG  
 ATGGAGAACGGGCAGGGCACAGCCGCGAAGCTGGGACTGCCTCCCTTGACGCCCCGAGCAGCAGGAGG  
 CCCTCCATAAGGCCAAGAGTACGCCATGGAGCAGACCTTAAGAGCGGCTGTGAAACATACCTCG

>'991108a-065.scf' came from CONTIG 41 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-065.scf"(47>511)  
 CGCCCCGACAAGTGAAGAAGCACTACCGCCGTGCCGTGCTGGTGGTCCACCCCGACAAGGCCCGGGG  
 40 GCAGCCCTACGAGCAGTATGCCCGGATGATCTTCATGGAGCTCAACGATGCGTGGGCTGAGTTTGAGA  
 GCCAGGGCTCCCGGCCACTCTTCTGACCTGCAGGCACGGCTGCGTGTCTGGCTCTGGAGCCGGTGCTG  
 TGAGCGGCCCTCGAGGGTGGCCAGGGCTCCGGCGGCGTGGGCAGGCGTGGCTGCACCCGGTCGTGCG  
 45 GTCGTGCCCATGTGCTCAGCGGGTCCGAGCCGATGGCGCTCCCGGCAGGAGAAGAGAAAGCATTCCA  
 AAGCCTCCAGTCTCTTTTCTGTCTTGGCCCCAAGAAACGTGCACTCCGTGCTCCACGCGTGTACGC  
 TTGATCGTTNTGTCCAGGGCGCGTCAAGAGTGGGCGCGCTGGCTGCTACTGCAGAGCGT

>'991108a-066.scf' came from CONTIG 42 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-066.scf"(47>571)  
 TCGAGTTTTTTTTTTTTTTTTTTTAACTGTATAAACTATTTATTAACACAAAGCCACACATTATTC  
 50 TTCTTGGACACACCCACAGTGCAGCACGGCGGGCCTGTGGTCTTGGTGTGCTGGCCTCGGACACGGA  
 GTCCCCAGAAGTGGCGCAGCCCCCTGTGGGCCGAATCTTCTCAGGCGCTCCAGGTCTTCACGGAGT  
 TTGTTGTCTAGACCGTTGGCCAGGACCTGGCTGTATTTCCCGTCCTTCACGTCTTCTGTCTGTTTAGAA  
 55 ACCAGCTGGGATCTTTGATGGGCGGGGATTCTGCATAAGGGGGATCACACGNTCCACCTCTCCTCGGT  
 GAGCTCCCCGCCCTCTTGGGAGGGCGATGTCTGCTTTCTCACACCACAGAGCATATCTTCCCCCACC

CTAATGCAGAGAGGGAAAGCAATTTCCGCCGCCATGATTGTTGTGAGACTCCAGAGTGCTGGACTCTA  
GGATTCTAAAAATGGGGGGCCTACGGGGGGGGGCGGACCAACC

>'991108a-067.scf' came from CONTIG 43 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-  
067.scf"(53>641)

GCACGAGGTGTTGCGCCACTTGCGCCCTGGGCAAGGGATGCCCTGTGGGGTGTACACCCCCGCTGCG  
GCTCCGGCCTGCGCTGCTACCCGCCCGGGGCGTGGAGAAGCCCTGCACACGCTGGTGCACGGACAAG  
GCGTGTGCATGGAGCTGGCAGAGATCGAGGCCATCCAGGAAAGCCTGCAGCCCTCTGACAAGGACGA  
GGGCGACCAACCCCAACAACAGCTTCAGCCCCTGCAGCGCCACGACCGCAAGTGCCTGCAGAAGCAC  
TTGGCCAAAATTGAGACCGGAGCACCAGTGGGGGCAAGATGAAGGTCATCGGNGCGCCCCGAGAGG  
AAGCCCGGCCTGTGCCCCAGGGCTCCTGCCAGAGTGAGCTGCACCGGGCGCTGGAGCGGCTGGCCGCG  
TCACAGAGCCGCACCCACGAAGAACCTTACATCATTCCCATCCCCACTGCGACCGCAACGCAACTTCC  
ACCCAGCAGGCCACCGCCCTGGATGGCAGNGCGGCAGGCTGGGGGNGGGACGGAGACGGAGGGA  
AGCTTCGGGGGCTGGAGCGAAGGGGAGCGAACTGCACAGTGCTGACACTT

>'991108a-069.scf' came from CONTIG 44 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-  
069.scf"(47>434)

CTCCCATGCTCCCTCTTTTGGCAAACGTGTAAGTACTGTCTCAGCAAACAGCGATAATTTACAATTTCC  
TCTCTAGAATTGCTGAGAGACTTGAGTCACCAAACGTGGTTCACTACTGTGGAAATGCATTGTTTCA  
ACACAGAAAGAAATTTAAGATTTCTGCTTTTCTGTGACAGTATTTGTTTCCGCCTCAGTTCAGAGTGTG  
AACTGCAGGTTTCTGGCAAGACTGCTATTTAACATTGCATGTGAGAACCTGGTAAATAGGCAGAAAAT  
CTTGAGCTTGAAAGGAACCTCAGAATGATTCATATGGTCATTTCATTAGATTGGGACCTTTAAGGGAT  
CTCTTTCAGCCTCTCTCAGTGCAGAAATCAGGACAGGGGTGCTTGG

>'991108a-070.scf' came from CONTIG 45 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-  
070.scf"(53>606)

GCACGAGGGTGGTCTGTTTGTCTTCTTGGCTAAGATTAGGACAAAGAACATATGAAATCAACAGAA  
AATATACCTTGGTACCACCAACCATTTTATGCCACATGCAAGTTTTGAATAAGAATGGTATAGAAAA  
TAATTGCTACATATGTATGTACCAATTAGGAAATACTGATGCCCTTGTGGGCACAGAACCACATGAC  
AAAACCTTTGAAAATCATAAAAATATAAGATAGTGTGGCTGAGATGGAAACAGGCCTTATTCTTGAATC  
CCAATTTTCATCTCTCCTTTTCTTATTTGGATTCTTTGGTGCTGTAGGAAAAAAAAAAAAAAAAAGAGAGAA  
AAATATATATTCATAAAAAGATATGGNGCTCATTCCCATCCATCAAGGATGTGCTAAAACAATGTGTTT  
AATAAAATGTAATTTTATGTACAGGTCTATACTGTTATCTATGTGTCCATTTTCAAACACTGCACGTGTCT  
CTGAATTCATCTGACTCTATTTTTGACATTGCAGAAAATGATGGCATAAAATATGTATATGAAAAAAT  
AAACGTT

>'991108a-072.scf' came from CONTIG 46 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-  
072.scf"(53>612)

GCACGAGGCTGGAGCATAAGAACAGTGCTTATTTTCTTCTTTTCCAAGAGAACAGAAAGAAATAATGA  
AGCATTGGATGATTTAAAAATCCAGAAAGAAAAAATACTTGAAGAAGTCATGGAAAAAGAACTTAT  
AAAACAGCTAAATTAATTCTTGAAAGGTTTGATCCAGATTCAAAGAAAGCAAAGGAGTTTGAGCCACC  
GTCTGCTGGAGCAACTGTAACCTCCAGACCTGGACAAGAATTCGTCAGCGAACTGCCGCTCAAGAAAC  
CTTCTCCACACCAGCAGGCTCCAGCCAGGCCCTCCTCTGCAATTCCAGTTTCTCCTGGACACCAAGGA  
CACTTCAGCCCCTGGTGGACCCCCAGAAGACTGNTACTCAGCCTATATCAATGTGGTACAAGACGTNT  
GGACCCCTGCTCTCAGNGCTGGATGGGNCCTCCTCTGGGCACCTTACAGACCATCTGCTCGAGACAG  
NGCTCTGATAATGTGATATTATGNGAGGCCCAAAAGNACCCCTATGCNACAGTTTTTACATGCTGTTT  
GAAGAAATGAACATG

>'991108a-074.scf' came from CONTIG 47 at offset 0;"E:\SEQUENCE\export\EST\_db\991108a\991108a-  
074.scf"(47>565)

CAAATTGAGATTTGCCAATGGAAGCATAAGAACATCGGAACTGCGACTCAACATGCAGAAGTCGATG  
CAGAGCCATGCCGCGGTGTTCCGTGTGGGGAGTGTGCTGCAGGAAGGCTGTGAGAAGATCAGCAGCC  
TCTACGGAGACCTGCGGCATCTGAAGACGTTTCGACAGGGGAATGGTCTGGAACACTGACCTGGTGG  
GACCCTGGAGCTGCAGAACCTGATGCTTTGTGCTCTGCAGACCATTCTACGAGCGGGAGCCCGGAAGG  
GAGTCGCGCGGCGCCACGCCAGGAGGACTTTCAGAGAGGTTGACGAGTACGATTACTCCAGCCCATC  
CAGGGNCAGCAGAAGAACCCTTTGAGCACACTGGAGGAGCACACCTCTCTACGTTGACATCAAGATG









>'991115a2-006.scf' came from CONTIG 4 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-006.scf"(76>588)

CATCCTCTTCTCTGTCTCACGTGTGCTCTTTTTCTTTCTACCAAGTGTATATATTTTAGCAGCATCTA  
ACTCAACATTGATTTCTGCATTTCTTGCTAATGCACCTTTAGAAGATACTAGTCTTGGGACAGGATCAT  
TTTTGGCCTCATTCCTTTACCACCCCTACACCTAAGAAGCATATTTGCCAGAAAAATTAATGTAAGAAG  
CTTTCAGTATTAGTGATATCATCTGTCACTGTAGGTCATACAATCCTTTTTTAAAGTACTTGGTATTTGG  
TTTTATTGTTCCCTTTTTTTTCTGCTTCTTCTCAAAGTTCATTCCCCAAAGGGCCCTACTGTACTTCCT  
GCAGNGCCCTAGCCCAGAGCCCATGGCTTTGATCCCTCCATCCCCTTGCTTTGCTGACCTTGGAAT  
CTTAGTGATCGCTGGTATTATATGACACTTTCTGGGGAGTGCCCTAATTGCTAAATCAAACCTGGATTA  
TGGGCAANCAGCGCTTAAGAAGAA

>'991115a2-007.scf' came from CONTIG 5 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-007.scf"(76>592)

CTGTGGTTAAGCGAGAGAAGCGTTGGTCAACTGCCACTCGAATCACGGAGACAGGAAGTCCCTGCCAT  
GCCTCACATCGACAACGACGTCAAACCTGGATTTCAGGATGTCTGTTGAGGCCCAAACGCAGTACCC  
TTAAGTCTCGAAGTGAGGTGGATCTCACAAGATCCTTTGCCTTTTCGAACCAAAGCAGATGTACACTG  
GGATCCCCATTATTGCTGCCAATATGGATACTGTGGGCACCTTTGAGATGGCCAAGGTCTCTGTAGTT  
TCTCCCTCTTCACTGCTGTCCATAAACACTACAGCCTCGAGCAGNGGAAAGAGTTTGCCAGCCAGATC  
CTGACTGTCTTGAGCATCTGGCTGCCAGCTCAGGCACAGGCTCTTTCGACTTTGAGCAGCTGGACAGAT  
CCTGAACGCTATTCGCCAGNGGAGAATGTATGGCGGGAGCGGGCCAAAGGCTACTCTGTACACTTTTG  
TATTTGTGAAGGAGTGCGGAAGCGCTTCCTGACACACC

>'991115a2-008.scf' came from CONTIG 6 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-008.scf"(82>410)

GCACGGGGGCTAGCTGATGCGCTCAAGGAGAACGACCCTTCCAGCGTGCTTCTTCTCTCGTGGGGTT  
CCAAGAAGGACCTGAGTACTCCTGCTCAGTATATACTGATGGAGAAAGATGCACTCAAGGTGGCCCAA  
GAGATGAAGGCTGAGTATTGGGCAGGCTCATCTCTCACTGGTGAAGATGTCCAGGAGTTCTTCTTTCTG  
GTGGCGGCGCTGACCTTTGAGGTCAACGTGCTGGCTGAGCTGGAGAAATCGGGATCCCGGCGCATAGG  
GGATGTTGTTGCGATCAACAGTGATGACAGCAACCTCTACCTAACTGCCAGAAGA

>'991115a2-009.scf' came from CONTIG 7 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-009.scf"(82>751)

GCACGAGGCTGGGCCCTCTACGCCGGTGACGGGCCAAGTCTCGGCCGACTTACAACAAGGTAGCTGTC  
ACAAGGGCGGGGTTACCCTCGGGTTCCTGTGCGGGTTCATTCCCCCAAAGAGTCCATGGGACCAGA  
CCACAAGGCTCTCCCAGGGGACCAAGGGGGAAGGGACCGGGATCCCAGGGTGTGGGATTGCCAAAAC  
AACCCGGGGGATGGCTTCAAGGAACAAGCGCCCATGCCTGGAAATAACCTGGAAAATCGCCCCAAGG  
ACCCTGGAAAATGTACTGGGGATCAAACCTATTTTCGAGAATAATAAAAAATAAAAAAGGAAACAGAA  
TCTTTTGGGCTTGGGCGTTTGATTGCCCTTTGGACTTAAATATTTTTGTAAAAAAGAAAAATAAAAT  
GACCCCCAAAGATTGGTCTTTCCCATGGTAGCGAAGATTAAGGAACATCTTTTTTAATGACAAAAAA  
ATTTGTTTATAAAACCCCATCAAACAAAAAAGACTTCCTTGATTGTTGTTTACCCCCCCCCCGG  
GGGATCAAAAAGCGGATCCTTGAATTTGCTTGGGGAAACCATGAACTTGTCATGCCCCCGGAAGC  
CCCCACCTTGAGGGGCACAAATAAAAGCCCCAACCCGAGGAAAAAACCAAAAACCGG,

>'991115a2-011.scf' came from CONTIG 8 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-011.scf"(83>521)

GCACGAGGCCGTACGCTCCCTGCACTTCGGGTCTGCTTGCTCCAGCCCGCTCTGCCGCCGCCGCCGCTCG  
CCGCCATGGGCCCAAGCTGACATTGCCCTGATTGGACTGGCTGTCATGGGCCAGAACTTAATTTTGAA  
CATGAATGACCATGGCTTTGTGGTCTGTGCTTTAATAGGACAGTCTCAAAGTTGATGACTTCTTGGC  
CAACGAGGGCGAAGGGACCAAGGGCTTGGTGCTCACTCCTTGAGGAAAGGCGGCCAAGCTGAAAAA  
ACCACGCGGGATCATCCTCCTTGGGAAGGCGGGAGGCCGTGGATGATTATTGAGAAATGGTACCTTGC  
TAGAATTGGTGATATATTATGATGGAGAAATTTGAATACGGATACAGAAAGGGGGGAGACTCAGAAA  
AGGAATTGTTGGGGGGGAAGTAGGGGGAAG

>'991115a2-015.scf' came from CONTIG 9 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-015.scf"(75>420)











GACCTACTGAATCACCGCTGAACCAAAATTTNAGAGTTTTATGAAAAAACCCGCCCTCCAAAAACCCC  
CCAGAACCT

>'991115a2-032.scf' came from CONTIG 23 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-  
032.scf"(83>484)

GCACGAGGCAGTCCCTAATTGAGGAACTAAGATCCTACAAACTGTGGGGTGAGGCCTAAGAAAAAAA  
AGAAAAAAAATGGGTGGTCAAGGAGGGCCCTTTCTGAGGGAGTGACATTTACGCAGAGATGTGAAC  
AAAGTGAGGGTTTTTCCTGGGGAAACACTTGCCAGGCACAAGTGTGATCATGCTTAACATGTTTCGCTA  
GCAAGGACTGTAGGGGAATATTTATGAGGAACGCATGTGCCACAAGAACAGAGATCCTGTTACCTAT  
AATGCCTTGAGCAGACCTGGCATGTACCCTCAACAATACTTGTGAATGAATGGATGGGCAGATAGAT  
GGATTTTAATGAATGAGCAATAATGATACATTCTCCCAATAACCTGGAGCCAGAAGAGAGGAGA

>'991115a2-033.scf' came from CONTIG 24 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-  
033.scf"(76>595)

CTCACCTGCCACCTATGGGCCACCTGAAGCAGTGCCACGGCCAGGAGGAAGCTGGCAGGCGCAAATT  
GTGGTCAGCCCCTGCTGGGCTGCTGCGGGGGACAGGTCTCGCTCTGCTGAGTCCGCTGAAAGCCC  
CAGACTCCCTGCCCCAGGGGACTCCACTGGCAGCCAGCCTCTCTGCAGCCTCCCTAACACCCTTATGTG  
TCTCAAAGAGGGGAAGTGCCCTCTGTTCAATGCCCCCAGCCATGCCAGAGCTCAAGCCAAGCTCCT  
GCAGGGACTGGCGTGCCCTCCCCAGGCCCCACGTGCATGGACGCTTCCTTAGTGCGTGCCCGCTCCTTG  
CTGAAGGCTACAGAGAAGAGGGGNCCTAATCAGGCCTGGTGAATGCCTGCCCTGGAAGCCGCCAGG  
CTGCAGAGTTCCAGAGACTCTGGGACTTTGAGAGAAGNTTCAAACCCAGCCTACAGGGACGACGCCC  
CACTCCTTGCTGGCCCGGCTCACCTCCCAGGAGGGGGGCTCCGG

>'991115a2-034.scf' came from CONTIG 25 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-  
034.scf"(75>554)

TGGACGCACTCGGGAATTGTAGAAGGACGAGGCTCAGCTCTTGCCAGGCCGACTTGAGACATGTCTGA  
CACAAGCAGAGATGGTACGGGTCCAACCCGCTTTCAGGCTGAAGCTTCAGAAGAGGACCCTGGCTTGA  
AGATGCAGACCGGACTGACAGGGACCCAGAACTTAAAGGCCTCAGAAACACCGAAAGGCTCAAAGAC  
ACCAGAGGGCTCAAAGGCCACGAAGATCTCAAATGCTGCAGGCGTCTCAAAGGCCACTGAAGCTCAG  
GAGGTATCTGCCACTCAGGCTTCACCTACCTAACTGACCGATACCCAGTTTCTAGCAACCAAAAAG  
AAGAGTCTGGCAGTTGACACCAATGCAGCATACTGACCTTAGGCTGTGAAATGCCTGGTTATGAAA  
CCAAAAGGTAGTTTGGGTTGATACCAAGGTCATACAAAACCTGGAAATGAATTTACTGCTTTAGCTT  
TGGCGA

>'991115a2-035.scf' came from CONTIG 26 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-  
035.scf"(82>672)

GCACGAGGAGAGAACTGCCACAGGGGATTTGCACGGGTAAGTGCTATATATGTGAGGTACCTACATG  
GCTGAATAAAACCAATTGTATGAAATCATTTATGCAAAATGGAAAGGGTGATTGGGGTGAAAATCTGA  
AGGAGAGATTGCTCGCTGTAAGCAGTCATCTGCGATCCCAGCTATGTGAAAGATCGAGAAGAATAA  
GTGGGCCAGGTGATCAGAGTCATCTGTATTCTCAGCCACCCCATCAAAACACCAATGACGCCCCACTC  
CTGCCAGATCATTATTCCACAGACCCAAGTCAACCGGAAGTCAGATATCTACGTCTGCATGATCTCCTC  
TGCACACATGTGGCCGAACAGGCAGAACATCGCCATTGCCACACAAAGGNGGAACCAAGAGGCCGAA  
AGGAAACAAACAACCTGGGCTTTTGGACCAATGAACAGAATTCGTAGATCAGGACCTCCTGACCAAA  
GATGGGAAAAAAGCAAACCTTTTCGCACTTAAGCACATCCTTTAAACACTGGAGACATAGAATTATAA  
GAAGAGGACCGNTGCTGGAAAGAAGAAAAAAGAAAAAGGGAAAAAAAAGAC

>'991115a2-036.scf' came from CONTIG 27 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-  
036.scf"(83>509)

GCACGAGGGCCAAGCCCTCCTCCAGGGGATCTTCCCAATCCAGGGATCAAACCAGGTCTCCTGCATTG  
CAGGCGTTTTCTTTACTGGCTGAGCAGGTGGGAGAAAATAAACACAAAGATTACTGAATGGCCACATA  
GGCTAAGAAATGAAATAGGTGTAGTGGGGCGGAGCGGGGCATAAAAATACACGGTGCCCGGGTTTTG  
GTCACTTAGTGAGGTGCAACGGGCAGTCACTGGGCAAGATCCTGGGGTCACAGCGGGAAAGCGGGG  
TCCCTGCTCTCACTGACTCACGTTCTAAGGGGGGCGGGGCGGGGGAGGGCAGGCTGGAGGA  
GAGAGTTTGGGGGACCAAAACAAGCACGGGCCAGGGCTGGCAGGATGCCTGCGAAAACGGCGGGGT  
GCACACCGAGCTGGGGCCAGATCG



GTTGAATCAGGTGAATTTCATCTCATCAAGAAGCTATCATGAAATGCTTAAAAAGTAGGAAAGATGAAA  
TCAAGAAGACTCTGTTGGGAGAAAATAGTGATATTTCTCTGCACGACTACGGGATTTTGATTGTCAG  
ATAAAGCTTGCCTTTCTATGACAGATTGCTTCATTACAATGCACITTTTAACCTTTTCTGATGTAAAAAA  
AATGGGAAGGAAGCCTATCTGTTGAAGAGAAAGAGAACGCACAGCTATTAATCCTGGAGCGCTATAG  
5 GGGGCTGCGCTAAAAACGAAAGAGATACACATTCAATTCACGGCACGAGCCAGAAGAACAGGTCCGA  
AACGATGCCA

>'991115a2-046.scf' came from CONTIG 34 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-  
046.scf"(83>697)

10 GCACGAGGCTTTTGAAGATTCTTCGTTGTCAAGCCGCCAAATGGAGAGTGCATCGCAGAAGGGGTGC  
TTCTCGTTTCAGTGCTTCTTCGGGCGGAGGAGGAAGTAGGGGTGCACCTCAGCACTATCCCAAGACTG  
CTGGCAACAGCGAGGTCTTGGGAAAAACCCAGGGCAAAACGCTCAGAAATGGATTCTGCACGAAG  
CACTAGACGAGATGACAACTCCGCAGCAAACTCCGCAAGTGAAAAAGAACGACATGATGCAATC  
TTCAGGAAAGTAAGAGCATATTAACAAGCTTACTCCTGAGAAGTTTGACAAGCTATGCCTGAGCTCC  
15 TCATGTGGGTGTAGAGTCTAACTCATCTTAAGGGGGCATACTGCTGATTGGGGACAAGCCCTAAAGA  
GCAAAGATAGCTACTTATGCTAACTATGCTGGATGGCAGAGAGCACAACCTTTGAGGCCAAAAACAAA  
GGCAACAGAAAAAACAAACCACATCAACCCCTAATCCAATACAAAAATTAACCAACAAAGTGAG  
CTATAAAAGGAAAAACCCCCCTGAGAGAGAAGAACATGCAAAAAAAGGGGAAAAAACTGGAATGAA  
GTGGCTTTC

20 >'991115a2-048.scf' came from CONTIG 35 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-  
048.scf"(77>568)

25 TGTGTCGTCTTGGAGGTGACTCGGCGTGATTGAATTTGCGGCATCTTCGCATTCACTCACAGGTCAAAA  
TGCAGATCTTCGTGAAAACCCCTGACCGGCAAGACCATCACCTGGAGGTGGAGCCCAGTGACACCATC  
GAGAACGTGAAGGCCAAGATCCAGGATAAGGAAGGCATTCCCCCTGACCAGCAGAGGCTCATCTTTG  
CCGGCAAGCAGCTGGAAGATGCCGCACTCTTCTGATTACAACATCCAAAAAGAGTCGACCCTGCACC  
TGCTCCTCCGTCTGAGGTTGGGATGCAATTTTTNGTGAGACCCCTGACCGGCAAGACCATCACCTTGG  
AGTGAGCCCAAGNACACCATCGAAACGAGAAAGCAAGATCCANGATAAGAAAGCATTCCCCCGACC  
ACAGAGCTCATCTTGCCGGCAGCAGCTGGAGATGACGCCTCTTCTGATACACATACAAAAGATCGAC  
30 CTGCCCTGCTCTCCGCT

>'991115a2-049.scf' came from CONTIG 36 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-  
049.scf"(77>656)

35 CAGCTGTGCATCGACATGTTCTCAGTGTCTGGGTAAGACCAAGAAGCTGCCAAGATCCTCTCCAAT  
AATCCCAGCAAGGGACTGGCCATGGGGATTGCCAAAGCCTGGGAGCTCTACGGCTCAGCCAATGCTCA  
GGTGCTACTGATTGCTCAAGAGAAGGAAAGGAACATATTTGACCAGCGTGCCATAGAGAATGAGCTA  
CTGGCCAGGAATATCCATGTAATCCGACGAAGGTTCAAGATGTCTCTGAAAAGGGGTCTCTAGACCA  
AGACCGAAGACTATTTATGGACGGCCAAGAGATTGCTGTGGTTTACTTCCGGGATGGCTACATNGCCA  
GCCATTACAGCCTACAGAACTGGGAAGCACGCCTGCTCCGGGAGAGTCATGTGCTGTCAAGGCCCCGA  
40 TTTGCCCCCACTGGCCGGGACAAAAGNGCAAGCAGACTGACAGATGGGCGGCTGGAACCTTCTCC  
CAGCACCTGAGCTGGGCCCCCTCCCGCCACCTTGTGCCTTATACTAACTGGTGAGAAGGACAGCTTCAC  
CAGCCTGTGTCCATGTTGGTTAAGCTAAAAGGGGAGGA>'991115a2-051.scf' came from CONTIG 37 at  
offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-051.scf"(83>429)

45 GCACGGGGTGCCTCTCTGAGTTATCCAGTTCCATCCTTGTGCTGCGGCGACACCCGCATTCTCCGTC  
GCCATGACTGAACAGATGACCCCTCGTGCCACCCCAAGGGCCACAACGGCTGGGTGACCCAGATCGC  
TACCACTCCCCAGTTCCCGGACATGATATTGTCCGCTCTCGAGATAAGACCATCATTATGTGGAAGCT  
GACCAGAGATGAGACCAACTATGGTATCCACAGCGTGCTCTTCGNGTCACTCCCACTTTGTTAGTG  
ATGTGGTCATTTCTCAGATGGCCAATTTGCCCTCTCAAGCTCCTGGGATGGAACCTTCGCCTTTGGG  
ATCT

50 >'991115a2-052.scf' came from CONTIG 38 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-  
052.scf"(77>560)

55 TGGTGCTGCTGGACGGACTGGGTCCCCCTGGACCTCTGGTATCTCTGGCCCCCTGGCCCCCTGGTC  
CTGCTGGTAAAGAAGGGCTTCGTGGGCCTCGTGGTGACCAAGGTCCAGTTGGTCCAAGTGAGAGAC  
AGGTGCCTCTGGCCCTCCTGGCTTTGTTGGTGAGAAGGGTCCCTCTGGAGAGCCTGGTACTGCTGGGCC  
TCCTGGAACCCAGGTCCACAAGGCCTTCTTGGTGCTCCTGGTTTTCTGGGTCTCCCNAGCTCTATAGG









AGCTTATTACATGCCGCGNGAAACCCAGCACCGCTAGCAGGGATCCCTCTCTCGCTCGGGCCCATAAAC  
GGGGGGGCGCTTCTATGATTTACAGCATTGGTCTTCTTAGCCCTCTCTCTAAAGGCCTTTTTCTCTAATA  
GAAATTGAGACTAGGTAATAGCTT

5 >'991115a2-082.scf' came from CONTIG 56 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-  
082.scf"(82>671)

GCACGAGGGATGAGTGCTAAGGGTTGATGCTGGTNGCCCTGGGAGCCCCCGGTAAGCCAGGGCTGT  
CCCCTTGGCGCTTCATAGGAATGTCGCTGGTGATTACGAGGTGCAGCGTGTGTCTTCCAGGACCCTAA  
AGGGTGACAGAGGGGGATGCCTGGTCCCCAAAGGGTGCTGGATGGGTGGCTCENNCTGGCAAAGATTG  
10 GCGTCCGTGGTTCTGGACTGGGTCCCCATTCGGTCCCTCCTGGCGCCCCCGCTGGTGCCCCCTGGTGGA  
CAAGGGTGGAAGACTGGTTCCTTAACGGGCCCAACCGGTCCCCACTGGTAGGCTCGTGGTGGCCCCC  
GGTTGACCCGTGGTTGAGCCCTGGTCCCCCCCCGGCCCCCTGGTGGCTTTCGCTTGGCCCCCCCCCTGGTGCT  
TGATGGCCAACCCTGGTGCTTAAAGGCGAACCTGGTGATGCTGGTGCTAAAAGAGACGCTTGTCCCCC  
CCGGCCCTGCTGGGCCCCGCTTGACCCCCCGCCCCATTGTAAAGTTGGTGCTCCGGACCAAAGGGCTT  
15 GTGGCAGCGCTGTCCCCCTGTGCTTATGTTTTCCAGGGCTGTTGA

>'991115a2-086.scf' came from CONTIG 57 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-  
086.scf"(76>860)

20 TATCGTACGGACAGAGGGTTTATATCACCTTATTCCATATCCCCCTCTTGGGCTGTGGTTGATGCAGTA  
TCATGGATGGGGGATGGACGCCCCAAGGTTCAATTGCCCGGTGCATCTTACCTTGGGACAGACTCCG  
GAACCAGTTGGGGAGGAAGTGTCGGTCTTTGGAGAAAGCGGAGAGGATGTTGACGTGGTTGCCTCTAT  
ATAAAAATGGGGTTATCAACCCAGGTGGGTGGGCCCTTTCAATAATATAAAAAGCTCAATGTGCTACG  
GCCGGCATTITTTCCATTACTCCTGTCCCCCCCCAGTCACTCTTGGGCTTGTCTTAGACCTTATGATGTTG  
TCCATTTGTTTTCTTGTGCTTGGGAGGCCCAATACTTTTTTTGTCCATTAAATATTCCTAAGGGATC  
25 CTCTGTGGAGGTACGGCTCAAATTGGGTTGGTTGCTCGTGATAAGCAACAAAGGGGCTGAAGGGCCA  
ATTTTCTTTGGAGGGTTGGGGGCTGGTGTTAACACCAAAGAAATTGATTGGGGGGCTTTCTGGTAAC  
CCCAACGAGAATAAAAAATGGGGTCCCCCTTTCGCACCTTTGTITTTCTTTGGCCCCGCCAAGACTAAAA  
ACAATTTGGCGAGCCACAGGTCACCACCCGGGCCGACCTTCGTTTAGGGGGGGAACACTCCTCCTA  
TACTCCCTCATATATTGGTAACACATTTTCTGGGCTCTTGTGTCTTCGCTTGCTTTGTGGGTTTGCGG  
30 GGGGGGCCCCCTCCACTTTCTGTCTCA

>'991115a2-087.scf' came from CONTIG 58 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-  
087.scf"(83>749)

35 GCACGAGGCTACANTCGGGCCTTGCAAATACCATCCCCCCTNGCCTGGACTCCGCAGCTGACTGTAT  
ATTCCCCTTGCGCCATGCGGGGACTGGGCTTATAGATACGTCTGGGTCAACGCTGTTACGAGGAGG  
GGACGGAGGGACAAACAACCTCCCTGGACCGAAGAAAGCAGAAAGCCTGCGAAGTGAAAAAAGATC  
CCACGAGAATGAAGAAGACGCGCTGGAGGCTGGCGGACCATTCTGTGGAACTGCCTGGCCCCGGG  
ACTTCGAGAAGAACTACAACATGTTACATCTTCCCTGTGCACTGGCAGGTCGGGGCAGCTGGATCAG  
CACCCCATTTGACGGGTACCTGTCTCACACCGAGCTGGCCCCACTGCGCGCCCCCTTATCCCCATGAAA  
40 CACTGCACCCACCCGTTTTTGAGAATGTGACCGGACACGACAGACATCGCCTGGACGAGGGGCCGGCT  
GCTGGCATCAAGAAAAGACATGACAGGACCCGGATCAAAACAGCCTCCTCGAAAACAATTTTTTTTG  
ACTCCCTCTGTTCCCAAGTTAAAGTGAGGTTGTGGTTGCTGGGAAGGGTAAATAAAAAAAAATTA  
GGGTAAAAAAAATTAACAAACAATTAATAATTAATTAGGTTTTGTCCATAAGGCCG

45 >'991115a2-091.scf' came from CONTIG 59 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-  
091.scf"(78>508)

CGCCGGCGTGCCACGTCCAAAGGAAAGTCCAGGAGGAAAAAGGATTTACGAATCTCCTGCATGTCC  
AAGCCGCCGGCGCCAGCCCCACGCTCCCCCGGAACCTGGACTCCCGGGCATTTCATCACCATTGGAGA  
CAGGAACCTTTGAGGTGGAGGCGGATGACCTGGTGACCATTTAGAGCTGGGCCGAGGTGCCTATGGG  
50 GTGGTGGAGAAGGTGCGGCATGCCAGATGGCAGGACCATCATGGCCGTGAAGCGCATCCGGGCCACCG  
TGAACCTCTCAGAGCAGAAGCGCCTGCTCATGGACCTAGATGTCAACATGCGCACGGTGGACTGTTTCT  
ACACCGTCACCTTCTATGGGGCCCTCTTAAAGGGAGACGGGGGGATTGGATGGAGCTTATGAACCG  
TCCTGGACAGTTCTATGGAGGTGCTT

55 >'991115a2-092.scf' came from CONTIG 60 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-  
092.scf"(84>529)

09676143\_060601

GCACGAGGGCACTTTATGATACTTTTTCTGCTTTTGGGAACATTCTGTCCTGCAGGTGGTGTGTGATGA  
GAACGGCTCTAAGGGTTATGCCTTTGTCCACTTCGAGACCCAGGAGGCTGCCGACAAGGCCATCGAGA  
AGATGAACGGCATGCTCCTCAATGACCGCAAAGTGTTTGTGGGCAGATTCAAGTCTCGAAAAGAGCGG  
GAAGCCGAACITGGAGCCAAAGCCAAGGAATTCACCCATGTTTACATCAAAAACITTTGGGGAAGAGG  
5 TTGATGATGAGAATCTGAAAGAGCTATTTAGCCCAAGTTGGTAAGACCCTAGTGTTAAGGTGAAGAGAG  
ATCCCATGGGGAAACCAAGGCTTTGGTTTGTGAGTTACAAAAACACGAGATGCCAAAAGGCTGGGGA  
AGAATAAAGGAAAAAAATACTGGAAGGCATTTCTGTGCCG

>'991115a2-094.scf' came from CONTIG 61 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-  
094.scf"(72>264)

10 CTGCAGGCCTGTATGCTTGGGAGGGGCATTGGGGGGGCCAGGAGNNGAGGAAGGGGGACGCACAGAA  
GGGATGGAGGATGGGTTGGGATGGGCATCCACCTGCACCTTCGCATGGNAACGTGGAGTTCCTGGAGT  
TGCAACCTCCTGGGGGAGTTTGGGTGGATAAGCACAAGGGGAAGGCCCTGGGCGGTGCC

15 >'991115a2-096.scf' came from CONTIG 62 at offset 0;"E:\SEQUENCE\export\EST\_db\991115a2\991115a2-  
096.scf"(78>582)

CGGCAGTAGCAGCCATGAAGGTCGAGCTGTGCAGTTTCAGCGGGTACAAGATCTACCCAGGACATGG  
GAGGCGCTACGCCCCGACCGACGGGAAGGTTTTCCAGTTTCTTAACGCAAAATGTGAGTCGGCATTCC  
TTTCCAAGAGGAATCCTCGTCAGATCAACTGGACTGTCCTCTACAGAAGAAAACACAAAAAGGGACA  
20 GTCGGAAGAAAATCAAAAAGAAAGAACTCGCCGGGCAGTCAAAATCCAAAAGGGCATAACTGGTGCT  
TCTTTGCTGATATATGGCCAGAAGAAATCAAAACCTGAAGTAGGAAGCTCAACGAGACCAGCTTTAGGG  
CTGCCAAGGAGCAAAAAGGTTAGCAGCATTAAAAGACGCATGCTGTGGAAGCTCCACAAAGCAGCAC  
TAACAAAAATGGAACCGGGAGGTTTTGTCTGGGTGTGAAAAGCTAGTGCGATGATTTTGAAAGAATGA  
TTTAATAAAAAAAAAAAAAACGAGGGGGCCGGCCC

Table 3

bioRxiv preprint doi: <https://doi.org/10.1101/2020.04.01.724464>; this version posted April 1, 2020. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under aCC-BY-NC-ND 4.0 International license.

5 GNCCCTTATAAAGTGNNNNNTCCNAATANNNGGGGGTATTACTATTTACAANTNTTCNTCNCTATAACN  
GAAGNCGCNATCNCAANCNGGCCCTTANCNAAATANCTNTCTTCCNTANCANNCTANATTTCTNTGAN  
CCTTAATNCCGTACAANNACTNAATAACNCTCTTGNTACATCCACNNTNNTATNNNANTNTNNTCATT  
ACCTCATNTTNTCTCTAANNNGGTTNTTTGAAATCTAGCTAATTCCNNNTANGAGGNAGNCTGAANTTT  
NNTNANANNTTAGACATCCGNTNTATANAGAANTNNANNNNTANNCTTNNATGANGNNAATNNNACTCN  
10 GTTTNNGTNNATTTAACGNTNNTNNTATNCTTGNNNGCCANGATCCATATNNNNNCNNNTGNNGNTCC  
CCNGNAATTNANNCCGGNNGCNGGTNGAANACNCNGCNAGANATAAGGGGGACANNTNNCTGAGTN  
NTCAATNACANGATNCGATANAACCTTACTNCTNATAGTNGNNAGTTANNNGCAGTNATANCNTTACA  
ANNAANNNNGGNNNTNNNGNNTNNTTATTANGAGGGGNAGNAATNNNNNAGNCTNAGGANTNACNN  
CNNNTNACNTNNTATNANGCTNANNAANNNACNCNNGNANGGNCNNANANNGAGTTTTANTTAGTN  
CANAGGTGNNNNNNNTAAANGNNTATNATGNGGATNNGNCGAGNNAATNGNANTNTACGNNNNNTTAG  
15 ATNNGGGGNAAGGATNGNNNANTTGATTCTNAANGGNGGNGAGGCANGNGTNANNNGTCNNGNN  
CTTCTNNCNNNNGANGNGGACAGAAATNNGNNGTGATAGGGNTTCNNGNTNGNTNAGNNNNGAAN  
ANCNNGNNGGNNANANAGTANNTNGNGANGNNTTCGNCNNANNGNGNAANTCNTAANTNGNNGN  
ANNANNNNCTNTNNTNNGTANGNGNGAGCANAGANATCAGANGNANGCATNTACNNNCNAGGNG  
GNNTGAGANGNANATANANGTTNACNAGNTNNNACNCACCGAGNNTTTNGTANNCATTNACNNNGA  
20 ANNTANNTNATNNANTGTNANTGANNCNTAGNGACNGTTAGANTANGANTAGTGNTANGTNANACN  
NAGNCNNGAGAGTGNANAGAGAGATATNNNATGNACNNGTAGAAATNTNTNNTCNCNGGATATGTAT  
ACGANCTGCGCGAGACG

25 TTCANCGGCNTTNNNNNGNANNCNTNNTNNGGGGGTATTANTANTNCAAANCNACGCGCCTATAG  
NGAGTCTNTANTGCANANGTGTTNTNGGANNGAGTTNTNATTTNCTNGCANNTNCTCTNNNNCTTAT  
TGNNAGNGTCNNTTCNNNATAACTNTTCNTNACCTGACGGGCTANTNANAGAAATNGNAANTCGNNNT  
NGTGNTNNTATNAGNGCACANANAGGNNTGNGANACGGTNCNNGGCCNACNGGAAGACTGNTCCA  
TTGTNNGTNCCTAGCGGGANGNNTNNTAGTNTTTTNTGNCNNNAGNNTNANAGNGGGNGACNNCNCN  
30 GNGGNTCAGCTGGCTGATACTCGCGNANTCNTGNNNNCNCNGATNGANNGTNNNNAATNTCNCAANA  
TAANGTCGANNTNTCNATAANGAGCGCGNCGNCCNTAANCTGGNGCATCTNCNGTGNGNCNAAATTG  
GTANGTNTATNTCTANNNNACGNNGTNNNGNCCNTANANTTCNATACATNANNTGANNNNGNCGA  
GGGANCNCGTTTNANGAACTANAAAGNGACGNGTGATTANNGCCNCCNGTGTAAGTGCNAGTNGT  
NNCNCNANNCCNANGANNNGAGNNCCNTTGNNNNANATCNNNTATNTNGNNNNNTTCNNACTGNCGA  
35 TNNNTNNTCNGNNANNNANAANTNNATGNNGCNGTGTATGTNCNNNAGGANNATGNTNAGNNCN  
GATGGTNNCNTGGGTGNANTCCGAGNANGATNTCNAANNNGGCTTGAGNGNNANATCGAACNTANTG  
ACNNGACNAGANCCNGNNCNTANNCTCNCNNAACANNTGAANNNNNGNGATGGNCGCNCNAGANN  
TNNCAANTACNANNAGCTACGANNNCNGGTGTNNACNNTNNGTNNNNCNCNAGCTNATCTNNTCT  
GNNNGNGNTCGTGACNNNTGANCTNNNCNNNAGCNTANCGANTGCNTGTATAATNAGNNNATATNGT  
40 TNTTATNCNATGNCNGTGCATCATGNANGAGNNNGTCATNNNTNNTNCACTATGTCTACGACTTGA  
NANCCNANNTCAGNNCANNTNCGTATNTCCNNNGANGTCNCCNCGTNNNGTCTCGATGAAGNTCNGA  
CGNAACTNNATGTNCCNNTTNCNGTATGACNNCATNGACNTTATCGTGNNANNNGCTNACNNTANA  
TGACGNNCTTCTNTGNANTNCCGTGCNNGCGCNTCCTGNNNACCGACGTCCTANNNACGNCNCANGTA  
TNGCATCAGGAGNACANGTTNCNNGTNNNTACNCGTGGTAAGNNNNGTNTCNTNNTCTCNNNNTTCN  
45 CN

50 GCCCTATANGGAGNNGTATNNCAGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCN  
GAGGTCTCCGGCCCTGTNTGCGCANNANGAGGCTGGGANATGGGCCCCAGGTCCCCCTGAGCCAACCT  
NCCGAGGANGANCTTANANAGGTNNNACCAAGANGCTGGNGCACNANATGAACCATCNNNCCANTNT  
ANNANTNCTTCANCCGCTGCGATNNNTANNNAAAACNNTANNTNANNGNTTNTNNTATATTTTANCC  
CNTANAANNAATNNNTATNTNTNANNNNTNTAAAACNTNGNNTTNNNTAATNNTTNTTTGANANNTTNT  
TCTCCCTTNAANNANNNNCGTTNTAAATNANACNTATNNNAGNGAGNNNNAACATNAATNNNTTGC  
NGNNTTTAANNTTNTNNNTNAACTTATTGCATAAAATNGNNTTNTATATNANATNTATNCANNAACA  
55 NACNNNATTACNNNTATTTTATTNTNTTATANNNNNANTNANTCTNCNAAATTNNTGTNAAANNTCGAN  
TTCAAATTAATTATNNTNNTNTNGNAGCNNATCTANNNGNACNTNTTNTNANTTATGTTGNGANTN



TNNNNNAAAAGCTGGAGCTCCACCGCGGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGC  
 AGGCAGGATCAAGCGATTCTTGGCCAAGAAACAAAAGCAGAATCGTCCCATTCCTCAATGGATTGCA  
 ATGAAAAGCTGGCAATAAAATCAGGTACAACCTCAAAGAGAAGACATTGGAGAAGAACCAAGCTGGGTC  
 TATAAGAAGCAAGCTGGGTCTATGAGAAGTGGTCTTAACATGTANACCACTTTTTTAAGCAGCCAGAT  
 5 CACAATGAAAACATCACTACTGTAAANGCTNGGCCCATGATGTTATTTCTCACTATCAGTCTGAGACCC  
 AGCATTAATAATAAANCCTTGCAAAAAAAAAAAAAAAAAANNNNGGGGGGGGGCCCCGGGCCCAATTN  
 CCCNTTNNGGGGGNNNTTTTAAANNN  
 NNN  
 NNN  
 10 NNN  
 NNN  
 NNN  
 NNN  
 NNN  
 NNN  
 15 NNC

TTGANANNATTGGACTCCCCGCGGNGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGATT  
 CGGCACGAGGCCGNNCTTGCCTGCTGCCTGCCTGCCACTGAGGGTTCCCAGCACCATGAGGGCC  
 20 TGGATCTTCTTTCTCTTTGCCTGGCCGGGAGGGCCTTGGCAGCCCCCTCAACAGGAAGCCTTGCCTGAT  
 GAGACAGAAGTGGTGGAAGAAACCGTGGCCGAGGTGGCCGAGGTACCCGTGGGAGCCAACCCCGTCC  
 AGGTGGAAGTAGGAGAATTTCGATGATGGTGCCGAGGAAACCGAGGAGGAGGTGGTGCCGAAAACC  
 CNTGCCAGAACCACCACTGCAAAACACGGCAAGGTGTGTGAACTGGACNANAACAACACCCCCATGTG  
 TGTGTGCCAGGACCCACCACTGCCCCTGCCCCCATCGGCAAAGTTTGANAAGGTGTGCAGCAACAAC  
 25 AACAANACCTTCAACTNTTCTGCCANTTTTNGCCACCAAGTGTACACTGGAGGGCACCANAAGGG  
 CCACAACTCCACCTGGACTACATCGGGCCTNGCAAATACATCCCCCCTTTGCTTGGACTCCGAGCTG  
 ACTGAATTTCCCTTGCCCATGCGGGNACTGGNTTAAAAAACNTCCTTGTCCCNNTTTNCANAAAGGG  
 GAAAAGNAAAAANAACNTTCTNNCCCGAAAANCAAACTTTGCGAAGTGNAAAAAATATCCCCC  
 GAAAANTTGAAAAAGCCCCCTNGGGGGGTGGGCAAACCTTTTNTGGGGNAAATTTGGTGGCCCCGG  
 30 GGATTTTCNACCNNCCNCCCCCCTTGGNNGGGTCCCTTTTTTTNAAACCNANGGTTGGGGN  
 GCAANTTTNGAAANCAANCCCCCCTTTTGGNNGGGTCCCTTTTTTTNAAACCNANGGTTGGGGN  
 NAAANNNGNNCCCCCCCCCTTTTTTTCCTTATNGGNAAT

TTNNNAAAAGCTGGAGCTCCACCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 GGAATTTGGTCTCGCGCGGGTCAAAAAGCNCNGACCAAGACTATGAANGGTTTTGAATACATCTTGG  
 CCAAGCTGNAAGGTGAGGCCCTNCCAAAACCTTGTGAAACAGCCAAGGAAGCCAAGGANAAAGGN  
 CAAGGAGACGNNCTGNCAGNTACAGAGAAGGCCANGGACCTTGNCAGCAATGGCAGCCACCAAGA  
 AGCAGCAGCAGNANCANNAGTTCGTGTATCCAGCCCANGCCCTGAAGCATCANNCTAGCAGACTACC  
 40 AGCTCCAGGCCNTGNGCCCCCTNCTCTGTACTTTATTATTAAGCCAGCTTNTATCCCTNTCGACTG  
 TCTGGGTGNTGGGCTGAGGGTANGNGCCCTGTTTGGCATTTTCAGCATAGCCAGCTGGTTACCCATATT  
 TGANCCGGGCTTACTTACCCCTGCATNGGGTGNCTGAGGACACATGCNCATNGACTTGCCACGGNCA  
 CCGTATNCANGTNANGCGGTCNTGAATGCTATACTGTNNGCTACATGANGNCANGGANCGTCGNTNN  
 NTCCTCTGATGAGAACGAANTATTTGAAACAAAAATNTTNGGTTGTNACANGCNCNCAANNATACTT  
 45 TGACGGAATTCNATNNGACCTTTNTAACAATTAANCCCTTNNNAACANAACCNTNGGGGGGGGGG  
 CCGGGGGCCCAACCCCCCCCCNTTATTTTGGGGGNCCCCCCTNNAANCANNAAGNCCCCNTGGTTAA  
 AAAACCTTTTGNCTTATTGGGNTTTCCGGGGNTTNTTNTTACCCTGGGNCCCCATNTTTANTTTNA  
 AAAANAANGGGGGACCCAAANCCCTTNTTTTNCANGNCCCTTTTTNTTCCCCCTTCCCNNTTTG  
 50 GGGGTTTTNTTTTNAACCTTTTTTAAAGCCT

NAAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGGAA  
 TNTGGNCTCGCGCGGGTCAAAAAGCNCNGACCAAGACTATGAANGGTTTTGAATNCATCTTGGCC  
 AAGCTGNAAGGTGAGGCCCTNCCAAAACCTTGTGAAACAGCCAAGGNNGCCANNAGAGAANGCCA  
 55 NNGAGACNNGNCTGNCAGCTACNGAGAAGGCCAGGGACCTTGNCAGCNAGGCAGCCACCAAGAAGC  
 AGCAGCAGNATCANNACGTTTCGTGTANCCAGCCCANGCCCTGAAGCANNAANCTAGCAGACTACCAN

CTCCAGGCCNTGNGCCCCCTTCTCTTGNACTTTATTATTAAAAAGCCANCTNNTATCCCTATCNACTGTC  
TGGGTGGTGNCTGANGGTANGNGCCCTGNTTGGCATTTCANCNTAGCCAGGTGGGTACCCATATTN  
GANNCGGGCTTACTTANNCNNGCATANNGTGGCTGAGGACNNATGCNCANAGACTTGCNCACGGCCA  
CNGTATTNACGTNAAGCGGNNNTGAANGNTATACTGTNNGNTACATGACGTNACGGNNCGACCGATA  
5 NATCNTCTGATGANAACGGANNTATGTTGANACAANATNTTNTGTTCANGCNCNNAATANATACT  
TTGACCGAAATTAATCTGGACCCCTNTTACCAATTAAGCCTTGNCCCCCACCNTGGGGGGGGGGCC  
GGGTGCNGAACCNCACCAATTGTANTTGGNNCCCNNTAACCCCCCTTANAAANTCCCCTTGGTTNA  
AACACCTTTTTGGNCCTATTTGGGNTTTCGGGAGTTTNTTTTTAACCTGGAGCCCCATTATTAGTTAA  
ATAAAAANGGGGACCCGAAAGCCTTNTTTTACAAAGNCCCTTTTNTTAAAC

10  
GNCCCTTANTAAGTGNAGTCNGANTTNANAGGGGAGNCCGNATTANANNAACTACGTTGGATCNCCC  
GGGCTGCAGGCAATTCGGCACGAGGGCCCTNTTGAAGCNCNTGCAGTACTGAGCNCNAAACNGNNA  
15 TNTATCACTGTGCCACCCANGGGCCCCGNACNNTAGAGANNNNNANCATNTNNCAATNGGCTAAAAAC  
NGCTCTTTNNANCGATCTNNGTATTATTTACNNATGNNCAAACGCTGTNTNAGTTANAANTCTNNTGN  
TTNACTATTNTTNATTACNTNTTNNNGNNTNCCANNNANAATGNTNCNTNNANATNANCNGNGNNC  
TNNNTTANGGNTACTNCTCANATNGGCTTNGGTGTNNACNTGAACTNTGNNANTNGNAATNNCENAG  
ACCGGTNNNGTATATTANNANCATNTNNGNGNNTANCTTTCTNCTCATCANNANNTATCCNNAGCGNN  
20 TTACNTANANATANAAATNNNAAAAGAGNGNTNNTTCTGGACTIONAGTNAAGANNNGAGAANCN  
NGATNANANTGACATGNNNNANNCNCANNANGNNTNANGNANTAAGTTNCGTNNNNNNGANNNGN  
NGCNCCTACCTNATTNANTNCGNGNNGNNNCNACNANTANANAGNTTNGNANNNNNNNANNNTNGN  
NGNTCNNNNCTTCNNAATGNNGGCANANGGANNTACTNNTNCTANNNANGNNGGGNTGNNGNCCN  
NTTTCTNTNGTNTTAATNNTAGTCNNTANAANGANNTATNTNANNNTNAGGNNNNNNNANNCNAN  
25 NAAANTAATGTACTNNNNAAGAGNCAAGANNNTGGNTNNNNAATNTNCNCNGTCGANTACCTNCTAG  
NCNNCANNTTAANNTTGAGGNGAGGNCNTCNGNNNCNAGNCTNTCNTTAAGTNGGGNNTGNNCGN  
NGCNGNNTANTNNNTNTNNNTTATCNTAGNNGNNAAGCNTANNNGGACANNANGCNGCTNNTNAN  
NTANGTCNCGCNAATNNNANNNCNGANATAGCENATNTNTTATANNNTNNAGCANCAGCACTANNG  
NNCTNNNATNAAANNTNTTTTANANTGCTCNGNNTNNTAGNAGGTNATNNNTNNNAGNATTNTNNC  
NNANNNTTGTNNNNAGGAGCANNNTGCNTGNNTNTGCTNGATATGNTCACTGTGAANCN

30  
TTNAGCCCTTATAGTGAGTCGTATTACAGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
GGCTGGACCCCAAGGCCCCCGTGGTGACAAGGGTGAGACAGGCGAACAGGGCGACAGAGGCATTAAG  
35 GGTACCGTGGCTTCTCTGGTCTCCAGGGTCCCCCGGCCCTCCCGGCTCTCCTGGTGAGCAAGGTCTT  
TCCGGAGCCTCTGGTCTGCTGGTCCCCGCGGTCCCCCTGGCTCTGCTGGTTCTCCCGGCAAAGATGGA  
CTCAATGGTCTCCAGGCCCATCGGTCCCCCTGGGCCTCGAGGTGCGACTGGTGATGCTGGTCTCTGCT  
GGTCTCTCCCGGCCCTCTGGACCCCTGGTCCCCCAGGTCTCCAGCGGCGGCTACGACTTGAGCTTC  
CTGCCCCAGCCACCTCAAGAGAAGGCTCACGATGGTGGCCGCTACTACCGGGCTGATGATGCCAATGT  
GGTCCGTGACCGTGACCTCGAGGTGGACACCACCTCAAGAGCCTGAGCCAGCANATCGAGAACATC  
40 CGGAGCCCCTGAAGGCAGCCGCAAGAACCCCGCCGACCTGCCGTGACCTTAAGATGTGCCACTCTG  
ACTGGAANAGCGGAAAATACTGGATTGACCCCAACCAAGGCTTGAACCTGGATGCCATTAAAGGNN  
TTTNTGCANCATGGNAAACCGGGNGAAAAACCTGTNTNTACCCANTTCANCCCANCTNNGNCCCAN  
AAAAAAATTGGTTTTTTNAANCAAATAANCCCCAAAGGAAAAAAAGGCNCTTTTGGGTACNGGGAG  
AANAACNNATGACCCGGGNGGNATTCATTTNTGAATTTTGGGGGCCANGGGTCCCNATCNCTCCCN  
45 TTGGGGCCATTNANNTGATTTTNNNTGGCCTNNTNNNNCNCCCCGNGGCCNTCCCAAAAANNTTCCC  
TTACCTCNGAAAAAANNGGGGNGNCCTANNTTNGNCCNANNNAANTTNGGCNANTNTANNANAAG  
GGCCT

50 GCCCTATANNAGNTGTATTACAGNNGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCGG  
GGGTCTCCGGCCCTGCAGGCGCAAGAGGAGGCGGGTATGGGGCCAGGTCCCCCTGAGCCAGCCTCCC  
GAGGAGGAGCTTGAGAGGTTGACCAAGAAGCTGGTGACGAACATGAACCAACCCCGCCNANCGGGAA  
GTTCTTTTCGGCCGCTTGGGNGGGTTGCGGAAAAAAACGTTGNTCGGGGAATGGGNCCGGGGTNGGGG  
CCTNGANTCGCGNTTTTTCNACNTGGCTTGTTTTGGGNGTTTACNNNCNNGGCCNACTTTCGGGNCNA  
55 NATTTTTNNCCCCGGGAAAAAGNAGGNCNNNTNGNAAAAACNNGTTNTGNGNCCNCCTNGNAAAANGGT  
TCNNNNNNNTCCNANCCATTCTNGANCNGANTNTNGGGGCTATNGGGAAAGGCTNNCAACCGGCTN

GTTTAACTNTGNGGTGTGCCACCNNGGGGCTCTAAACGGATTTCTTTNACTGTGGATANCCACANAACC  
ACATATCACTGTGATNTGAGGACANTTCACANAGANAANTTNCGCCCAAANATNCTCNAANATGTG  
GGNGNGGGCNCATATATGTCCCNAAAAACANNGTNCNGAGANAGAACACCTGGCGAAAATTNATA  
NTTCTTGTGATANCAGNTTTTTTNCAATNTGGNGTGTACNAAAANGTTGGAGNAAGAAGTTGTGGCT  
TNTTGGTTCTTCTTCTTCTTAGNNNGAAGAAGTTNANNANGGGTNTTAANNNCACCTGGTGTGAGGGA  
CCATTTTTTTTGCTANNAAAAATTCNTNNNTGNCTTNNNTGGGAATANNNNANNAAGGNTCTTTNTTANNA  
CCTNTTGGTTCAACCCNCGNGGTTGNTTGAATTCNCCAAGNNAGGAACCCANNCTGGTGGGCCTCC  
TTTTTTTTANTAAAAACAATNCTTCTNNNNNANAAAAACNNCTTTTTTAANANTTTTTTNACCAAAAA  
GANN

TTNAGCCTATAGTGAGTCGTATTACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
ANTTAANAGCGAGGNATNTNCGNNTGAGNGAANGNANANNGCTGCCTNCGNGTGTGNGNNNACNNT  
AANNANGTCCTATTTAATTTAGGNNNTNTGTATCTGGGNACNATNTNNNTTCTANNATAAGNGACA  
CCATTAACGTTTCGTNTTNATATATACNAANNNGNNCTTTTTGCCGTGGANGNGGGTTCNATNTGNC  
CNCCCNACCCCTNGNNCCTNTTTGCAAACCNCTCCCTNGTANCNAANNNAATTCNAAAANGGGNCC  
AAANCANTNGGGGGNCACAAAGAACCAACTNGCGGTNNCCCCCGGGTTTCCCANCCCAGGTTNCA  
AAAATTTTAAAAACNTTNAATTTGTGGGNAAGGNAATTCNNCATTGGAGANNNGCCTTTAACANANG  
GGCAGGGGCCCAANNCCNNACNTTTTTNTNGGNTGNTCACNTNTNAAAANNCANANACGGNTAT  
TTGTTNTCNAAGGNGGGGANAAAAANCCNCCNCGGNGANATGNAACNTCTTTTNNCGGGGGCNCC  
TGGAANAGNCTTNGTAATTACNAAGAANCNGCTCTTNCNTCTNATNNACANNTGNGGNAACCGN  
GGGTANCNACATTNGNANTAATTTTNGCNNANTTNAAAACCTGTGGGNGNGNGGTTNGTGGATTN  
AAACNACCAANNCTCNTTTCTTNGGNGGGGGGGANNAAAAANNAAGACCCCCNNNATANCTNNNN  
GNAAAAAATNATTAAAAAAAGCNNANTCCACTNAATGAATNAATTAATCCNCCCTTTTTTTTNGTT  
NGGGAAGGCCTCCNTTTTTNCNGNGNNNTTTNTNNNTTTTTTCNNNNGNNGNNNGNTAANACACCCC  
CCNGTTNNGNNGTNTNCCNCGGNNTTNTCCNNGAGGGGGGTNNNTTAAACCAANNTTNNCNAA  
ATANNTTGGGGNCCCCCTCCCNCGGNCC

TTNAGCCTATAGTGAGTCGTATTACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
ANTTAANAGCGAGGNATNTNCGNNTGAGNGAANGNANANNGCTGCCTNCGNGTGTGNGNNNACNNT  
AANNANGTCCTATTTAATTTAGGNNNTNTGTATCTGGGNACNATNTNNNTTCTANNATAAGNGACA  
CCATTAACGTTTCGTNTTNATATATACNAANNNGNNCTTTTTGCCGTGGANGNGGGTTCNATNTGNC  
CNCCCNACCCCTNGNNCCTNTTTGCAAACCNCTCCCTNGTANCNAANNNAATTCNAAAANGGGNCC  
AAANCANTNGGGGGNCACAAAGAACCAACTNGCGGTNNCCCCCGGGTTTCCCANCCCAGGTTNCA  
AAAATTTTAAAAACNTTNAATTTGTGGGNAAGGNAATTCNNCATTGGAGANNNGCCTTTAACANANG  
GGCAGGGGCCCAANNCCNNACNTTTTTNTNGGNTGNTCACNTNTNAAAANNCANANACGGNTAT  
TTGTTNTCNAAGGNGGGGANAAAAANCCNCCNCGGNGANATGNAACNTCTTTTNNCGGGGGCNCC  
TGGAANAGNCTTNGTAATTACNAAGAANCNGCTCTTNCNTCTNATNNACANNTGNGGNAACCGN  
GGGTANCNACATTNGNANTAATTTTNGCNNANTTNAAAACCTGTGGGNGNGNGGTTNGTGGATTN  
AAACNACCAANNCTCNTTTCTTNGGNGGGGGGGANNAAAAANNAAGACCCCCNNNATANCTNNNN  
GNAAAAAATNATTAAAAAAAGCNNANTCCACTNAATGAATNAATTAATCCNCCCTTTTTTTTNGTT  
NGGGAAGGCCTCCNTTTTTNCNGNGNNNTTTNTNNNTTTTTTCNNNNGNNGNNNGNTAANACACCCC  
CCNGTTNNGNNGTNTNCCNCGGNNTTNTCCNNGAGGGGGGTNNNTTAAACCAANNTTNNCNAA  
ATANNTTGGGGNCCCCCTCCCNCGGNCC

TTNANCAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GAATNCGGCNCGAGGNTGAAAGNAGGANGCTNTTGNCTTNNNTNNGNACATTTGGNGANGCNCACAG  
AATGGGCTTACTTATNTNANAANGGANTGAANAANACNNGNCNACACAAANCACTGANCTAGCGT  
TAACACGGAAGAGGCGCTGATTNCAGATTNNAAGTCGGGTNCTGTGTGCGTCCANGNAGTACACNTTN  
GNGCTTGNGAAGGGCTTGNATGGTGCTCACTNAAAGCATNAGGGANCCANNAANAANGNNATCAGN  
TGCTGAGCTNGGTNAATGTNANTNGAACTNATTNTTCNNNCACGNGAAATTGNTCTTTGGTATGCCC  
CNTTGNANTGANTAAGACCTGTTCNAAACTTGGNANCTTATNCATAATGCTGAAGGCAGAAAATCT  
GTTGAGGANAATTGCANGAGGGAAGGCTGCTTTGAAAGCGCCTNATTCTTTTTTCCAAACACTGCTTC  
ATTNCCAATATNAATATGATCTTAAAAAGTGTGNAATGAATANTGNTTAANGTCCCAATTGTGCTT



TTAGAGGGGGGCGNACTGATGCTTAAAAAATGAATTTTTGTTNTAATTACAAANACTGGTATTATNCN  
GGGGAAAAAGTGGGTTCAGGGTACANTCTNNGGGGAAAAACCNACCCGTNTGCCTNTTNAANCCTAAA  
AATTGCATNAACCTTTATNTTNTGATTCAAAAAAAGGGCNCNCTTTTGGNTTTTAAAAAGTTTNTAN  
AAACCCTGGNCCTTTTAAAGGGGTNAATGNTTTNAAAAATNNGGGGGGGTGTACCAAACAAACAAGT  
5 TNNTTTTTGNAAAGGNNTTTNGGGTTNCCCCNTTAAANNNGGGGGGNGGCCNGGGTTANCCNTCNA  
AAAAANAGNCCTGGGGTTNNCCNT

10 GANCANAGCTGGACTCCACCGCGGTGGCGGCCGCTCTAGAAGTGTGGANCCCCGGGCTGCAGGTTCC  
TCTCCAGGTCTTTNNTGNTGNCAGAGGTGGGGGTACGGTCCAAACCCCATAGGTCAGTCCGGCAGCA  
TGTGCTTTTAGCTTCTCTCTTACTAGGAGTCACATATCCCTTTGTGAGCTGGCCTTCAGTCTCTNGNT  
TCTGNGTATAAACCTTGGATATTACNGNNTTTTATATTTACCAGAGCTATTGAGCAANAGTATTNGAA  
CCACTAGCCTTTGAAATAAAAGNCAGCCCCGTATTAACAGNGCAGATACTGAGTCCACTTGGATTTC  
15 TTGCAGCTTTCTTTGCACTGCTTTAGGCAAAAAAGNGTTCATCTGGTTTTTTTTCATTTGACACCCAGTTT  
GCTGCANNACAGAACTTANTGCCTAATCTGTAGAGTTCNTATATATNTATATAAAATATATTNCCCN  
CNCTCCNCATATATATATGAAGTTAATGAACNGGNCAAGNGAAACATCCTAACTGTCCTTGGGATAA  
AGGANCCAGTTTTCAGGCAGCCAGCGCGGGGTTTTNTGTNGGTCTCCANCACATGCCATTCTCTT  
GCCCCGCCATTCTGGTACACTCGANGGGAGCTGGGGGACNCCACTGGGAANGTTTCTGNGGNCCTGT  
20 CTTGAATGNGGCAGGCTGGAGGGGNGCCCCCAGNGANCTGGGGCGTTTTTTGTTCGCCACCCNTT  
TTAAACTGGTTACNGGCAGGGGTNCCGNNCCNCCCCCCCCCGTCAAAAAAAAAGTTTAAAGGGGGA  
ATTTTGGGGGNGNACCCTTTACCCCCCGNAAAAAANCTTGGGGAAANCCNGGAANNCCGGCTTT  
TAANNAATTTTGGGNGGCNTTTNAAAAAANNGGCCCN

25 TTNNNAAAAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAAGTGTGGATCCCCCGGGCTGCAG  
GAATTCGGCACGAGGGGCGAGCCCCGGTGAAGAAGATCCAGGCCTCCACCATGGCCTTCAAGCAGAT  
GGAGCAGATCTCCAGTTCCTGCAAGCAGCCGAGCGCTATGGCATCAACACCACTGACATCTTCCAGA  
CTGTGGACCTCTGGGAAGGAAAGAACATGGCCTGTGTGCAGCGGACACTGATGAATCTGGGCGGGCT  
30 GGCGGTAGCCCGGGATGATGGGCTCTTCTCTGGGGATCCTAACTGGTTTCCCAAGAAATCCAAGGAGA  
ACCTCGGTACTTCTCGGACAACCAACTGCAGGAGGGCAAGAATGTGATTGGCTTACAGATGGGGACC  
AACC GCGGGGCTTCTCAGGCAGGCATGACCGGCTACGGGATGCCGCGCCAGATCCTCTGATCTGCTGT  
GCAGCCCTGCCCTGCCCTCCGTGAATGGTTAATATATATGTNGGTTTTTTTTTTTTTAAAAATTAANTT  
TCCTTGANAGCCCTNNGGANGCTTTCGCNCTTCCNTTTTGCAAGGGTTGGGGCCTGGCCTNTTTTTTCC  
35 GGGGGGGCCCAACGGGGGCCNCCCCCTTTGGGNTAAANAAAAAATTCNTTTTNCAAANCCCCCAA  
AATNGGACCAACNGGCCTTTTTTTTTTCCCTGGACANAAAAANNGGGGGGGACCTTTACCCCTTTTC  
GGAACNAAAACTTTTTTTTTTTTNTNGGGCCCTTTNCCCTTTTGGAACCTTGGGGGCCNAAAACC  
ATTTNNTAAGGGGGGGCAAAAAAGGATNNTTTNNTTNAAGGNTNTTTTTCCCCCCCCNAAAANTT  
TNNCTTTNCCCCCNCAGTTNNGGGGGGGGGGGGGGGCCTTTANTTTTTTGGGGGGGGGNCCTTGGG  
40 NCCCCCCCCCCCCCCCCNC

AAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAAGTGTGGATCCCCCGGGCTGCAGGAATTCGG  
CACGAGGATTCATTCACACCAACAACAACATATCAATAAACCTAGGCATAGCCATCCCCCTGTGAGC  
AGGAGCCGTAATTACAGGATTCCGCAATAAACTAAAGCATCACTTGCCATTCTTACCACAAGGAA  
45 CACCACTCCACTAATCCCAATACTAGTAATTATTGAACTATCAGCCTTTTTATTCAACCTATAGCCC  
TCGCCGTGCGGTAAACAGCTAACATCACTGCAGGACACCTATTAATTCACCTAATCGGAGGAGCTACA  
CTTGCACTAATAAGCATTAGCACTACAACAGCTCTAATTACATTCACCATTCTAATCCTACTAACAATT  
CTAGAGTTTGCAGTAGCTATAATCCAAGCCTATGTATTCACTCTCCTAGTCAGCCTATATCTGCATGAC  
AACACATAATGACACACCAAACTCATGCTTATCATATAGTAAACCAAGCCCTTGACCTCTTACAGGA  
50 GCTTTGTCTGCCCTCTTAATAACATCCGGCCTAACCATGTGATTTCATTAACTCAATGACCCTGCTA  
ATAATTGGCCTACCAACAAATATACTAACCAATATACCAATGATGACGAGATGTTATCCGAGAAAGCA  
CCTTTCAAGGGCACCATTACCCAGCTGGTCCAAAAGGCCTCCGGTATGGAANAATTCTTTTATTATC  
TCCGAAGTACTATTCTTTACCGGATTTTTCTGAGCTTTNTACAANTAAGCCTTGCCCCCANCCCTGNA  
CTANGNGGGTGTGGACCCCCAACAGGCNTTCNCCCTTAAACCCCCCTAAAAGTCCCACTGGTTCA  
55





TTTGANCACCGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGACCCCGGGCTGCAGG  
 5 CAGGANCAAGCGATTCCNGGCCAAGAAACAAAAGCAGAANCNCCCATNCCTCAATGGATTCAATG  
 AAAACTGGCANTAAAATCAGGTACAACTCCAAGAGAAGACATTGGANAAGAACCAAGCTGGGTCTAT  
 AAGAAGCAAGCTGGGTCTATGAGAAGTGGTCTTAACATGTAGACCACTTTTTTAAGCAGCCAGATCAC  
 ATTGAAAAACATCACTNCTGTATTGCTTGGCCCATGATGTTATINCCTCACTATCAGTCTGAGACCCAGC  
 AATAAATATAAAACGTGCAAAAAAAAAAAAAAAAAAANTTNGGGGGGGGGCCCGGCCCCANTTCCCCTT  
 10 TAAGGGNGNTTTNNAAAAANNNNNNNCCNNNCTNNNNNNNCNNNNNNNCNNNNNTNTNTNNNTCC  
 NNCNNTNNNNNNNNNTCTNNCNTNTNNNNNNNTCNCNNNNNTCTNCNNNNNTCCNNNNNNCCNNNN  
 TTTNTNNNTTCTNCNNCCNNNNNTCNCNNNNNTCTCNCNNNNNTANNTTCTNNTCTNNNNNNCT  
 NNCTTNTNNNNNNNTNNNNNTNTTTNCNTCNCCTNNANNNNATCCTNANNANCTNCNNNNNNNTCT  
 NCCNNNCCNCCNNNNNNNTCNCNNNNNTTNTCCNNNNNNNTCNCNNNNNNNNNNCNCNCNTCCCCT  
 15 TNNNACNCTNTTNNCCNNNNCCNTNNNNNCNCNNNNNNCCNCNCTNNTNTNTTTNTTNTCTNCTCNC  
 CNCCNTNTNTANNNCCNNTTNTTTTNNNNNNCCNTNTNTTCTNNTNNNNNTCCCNTNNNTTCTTNT  
 NNNCTTCNNCTNCTCCNANNTNCNCCTNTNTTNTNTTNTTNNNNCCTTNTNNNNNNNTTTCNNNNNT  
 CTTNNNNNTCNCNNNNNTNTNCCNTNTNTNTTCCCNNNCTNNCCN

20 TTNNNNAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GAATTCGGCACGAGGCTATTTCAAGTGGAAGTCTGATAGCAATATGTCTTCAGGGAATGCCAAAATTG  
 GGCACCGTGCCCCCAGTTCAAAGCAACAGCTGTTATGCCAGATGGTCAGTTCAAGGATATCAGCCTA  
 25 GCTGACTACAAAGGAAAAATGTTGTGTTCTTCTTTTACCCACTTGACTTCACCTTTGTGTGCCACG  
 GAGATCATTGCTTTCAGTGATAGGGCAGAAGAATTTAAGAACTCAACTGCCAAGTGATTGGTGCTTC  
 TGTGGATTCTCACTTCTGTCACTGGCATGGATCAACACACCCCAAGAAACAAGGAGGACTGGGACCCA  
 TGAACATTCCCTTGATATCAGACCCCAAGCGCACCATTTGCTCANGACTATGGGGTCTTAAAGGCCGAT  
 GAAGGCATCTCATTCAAGGGGCTTTTATTATTGATGATAAAGGAATCCTTCGACAGATCACCATAAA  
 CGACNTTCTGTTGGNCCGCTCTGNNGATGAAACGCTGAAACTAGTTCANGCCTTNCAGTTTACTGAC  
 30 AAACATGGGGAAGTGTGCCAGCTGGCTTGGAAAGCCTGGCAGTGATCCCATTCAAGCCTGATGTCCCA  
 NAAAAACAAAAGAATATTTTTNTAAACANAAGTGANCCGCCTCGNCCGTTTTTAANGNCCAGGCTT  
 GCAATAAGGCGGGCCTTTNAAAAACAAAACCTTNTTTTGGGCCCTAATTTTTGGGGCNTNAAAAACCN  
 TTGAATCTTNTCCCTCCCNCCCCGGAATGNGNGGGGGGAAACAAGAACNGGCCCTTTTCTTGCANGG  
 GGTGTTGGGGGACCCCCANCCNTTTTTTCTTGGGACGGGAAANAACCTGGGCCCCNGGNCCCAACN  
 35 TGGTTGTTTCTTGGGGANGGG

40 AAANCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAGCGA  
 TGGGCATCTCTCGGGACAACTGGCACAAGCGCCGCATACACACAAGAAAGTACCGGGCCTTGAGGCTG  
 GACGTGGGGAACCTTCTCCTGGGGCTCGGAGTGTTGTACACGCAAGACAAGAATAATCGATGTTGTCTA  
 TAATGCATCCAACAACGAACTGGTCCGTACCAAGACCCTGGTGAAGAACTGTATTGTGCTTATCGACA  
 GCACACCGTACCGACAGTGGTACGAGTCCCACTATGCACTGCCCTGGGCCGCAAGAAGGGGGCCAA  
 GCTGACTCCTGAGGAGGAAGAGATTTTAAACAAGAAACGATCAAAGAAAATTCAGAAGAAATACGAT  
 GAGAGGAAAAAGAACGCGAAAAATCAGCAGTCTTCTAGAGGAGCAGTTCCAGCAGGGCAAGCTTCTTG  
 45 CATGCATCGCTTCAAGACCAGGCCAGTGTGGCCCGAGCAGACGGCTATGTGCTAGAGGGAAAAGAGC  
 TCGAGTTCTATCTGAGGAAGATCAAGGCCCGAAAGGCAAAATAAACCTCTTCTCCTGTCTTAGCTC  
 ATCTAATAAAGGCGTTTACTGTTCTATGCCAAAAAAAAAAAAAAAAAATTNGGGGGGGGGCCGGGNC  
 CCCATTTCCNCTTTAGGGGGGNNNTANNANNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
 NNN  
 NNN  
 50 NNN

55 NNNGCCNGCCNTTTNNNTCNCNNNNNNNNNNNNNNNNNNNNCCNNNCCANNCCNCTTNTTTNCTNTTC  
 CNCTCNCNNGGGNNTATCATNNTGCTNACNNNTTCAGCCTNTATGATCGTATACAATGGCGGCCGCT  
 CTANAACCTAGTGGATCCCCCGGGCTGCAGGNAATTCGGCACGAGGCATACNTTTTAAACCAAGCCNCG  
 ACNTTCTTAGCTGNGCCTCAGCTCTACGGCCTCTNGCTCACCCATGAATGGACCCGCTTCTCTTGC









CAATTANCATTTGTACCATACACAGAGAAGATTTTCTTGNNATGACTACTTTNANGATCCACTCTNTN  
ANCAACTTTTCATATAAGACATCTGNGTTACAGTAACACACTGCCAGGTGGTCACTGACGTGAGGTGTN  
CCTCATGTAACACCAATCGCCCANCTNTTATCAGGTTTACATATTGGCTCTGATGGATGTGANAGCTG  
GACCATAAAGCTGAGCACCAANAATTGATGCTTTTGAAGTGTGGTGGAGAAGACTCTTGAGAGTCCC  
5 TTANACTGCANGGAGATCANACCAGTCNATCCTAGAGGAAATNAACTANATATTCATCGGAAGGA  
CTGATGCTGAAGCTGAAGCTCCAGTATTTNGGCCACCTGATATGAAGAGCTGACTCATTGGAAAANAC  
CCTGATGCTGGGAAAGATTGAAGGCAGGAGGAGAAGGGGATGACAGATGATGATATGGCTGGATGGC  
ATCCCGACTGAATGGATAGAAGTTTGAGTAACTCTTGGGAGATGGACAGGGAAGCCTGGGATGCTG  
CAATCCATGGGAGTGCAGGGTCAGACACGACTGACAACTGGACTGACTGGAGATTTGAGANGCCGAA  
10 TGGGTGAGTTCTGGGGTGAAGCANTAACATCAACCTGTCCCTACTTGAGTTAAGTAGGGTCTGGCTTT  
TCCTAAATCAACCCANTGGGTTCATATTGANGGANCTGNTTAGTGGTGCTTAGTTTTCTGNCAAAGN  
GCTNTTAGGAACATGCCTTTTTTTTGGGGNGNNAANAANAAAAAACNCATTTNTGTTTTAAAAA  
ANNNNNCTNNNTNNNNNTCNNNNNNNNNNNNNNNNNNNNCCT

15 TGAGNCCNANAGTGNNGTCTGATTACAANGGAGNCCGCTNTANAAGTAGTGGATCCCCCGGGCTGCA  
GGAATTGGGCCCCGAGGCCNCNTTGATAGNCTNCNNGNAGTGCCNAAANGATTGCGGGCACTNGTCNC  
ANANNGANNTNNGNAGANTTAGCTGGTGGAATNCGATGAACNGCGTCAGGANNNNGATCTNCTCAC  
20 NCGNNNTATCNGGNTATGAACTCGNNNNAANNNTNCCTTTATCTTNTTANNANTGCCTGACNGN  
NNNTCNCNTTGATNTACTGCNNNGACCACNGNCANANGTNCNTNCGATNTNNGGANCNNCTCNC  
TTTNCNNNNANNNNCANNGNGCNNNNNANAGANANGNNGTGTCTNGGANNNNAGTTTCATGAANGA  
NNATNTNANCANTGTGNTCTTTATACTGNNGTGNANATGGNCATTAGTTTTNGTNNATCNCACACN  
NANGNCTACANNANNGCGTCNANATNACANNCAAGTNNAGCTGNNNTNTGCTNNANATCNCNTNAG  
ANAANTGGCTNTNAAACNGNTATNGNNCANTAGANNNTGNATAATNNGNGNTGGANCNTTCACNATN  
25 CNTNCTANNACNNGTNCCTTNCATCCNNAATNGNNTAGNNTNACCNTGNNNCNAAACNCGGTNCC  
NGGAGNNCCATTANAAANNCCNNNGGATCNACNTGANTTCNNGNTANAACNANTCTACNCCNNTATG  
GACTNTGTNCTNNGTNCGNCNTGTNTNAAANNCGCGNNGNCANAGCNCNCTNCTTACANTCNTNNT  
GTCNNTCTNAGACNCNGNTTCCNTATGNTNACTNCACTNACNTNTNNTATTGTNGNANNGGTNNCCCT  
30 NGGNACNTACNNCTAACNCATTTGNNNTCANNANGNCCTTCTTNNATCNGNANGATCNTTTNCA  
CGTGNTANNCTCNCANNGTNNATGACGAGGTCTANAGAACNACTTTNNGGCCCANNGCTATACCAT  
ACTNNTNTNNTNGTANTNGGNNANNAANTCNTNNTCNCNCCGNTNTTATCTANTATTCCNATTCNAC  
TTTTGCACTTNTCNCACNACGNTNTTGTNTNNAACNNAGCNANTCNGCTNTNNTCTANNNGCTAC  
NCNNGANTNACNTTAGANNCCNNNTNNNNNCCG

35 ANCANGAGGGGGNNGTTNNCCCGNCNCCCCCNCNCTNNGCCCTATAGNGAGTCGTATTNCAGGGG  
CGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCACNTAGCCTTNGAGGCNTNTCTNACGNTT  
GGGCACTNATNCTGNCCCGCTNCGAGGGNNGCCAATTGTAAATGTNACANACTNCTCTCNCANNTCC  
40 CATCCTNCTTTTNNCCCTNCNTNCTCGANCCNNNTCGCNGGTNTNNGTNNGATCTTTCAGGANNA  
CCACTGGANCNNCNGCNTTCTNNTNANNTTNNATNCCNTNNAGGGTGGCANNANNTNCCNTTTTN  
CNCNATNATNGCGNCCNNNTNANNTANNTTGTNNTNCCCTCCTNCNACGNNATNNNNNTTCTT  
NTGNNNNCCCTNNGNNGCGTGTGNGNTNACCNNNNNANTGNNCNGNGCNTTTTNTNTGTNTNAANT  
NNNGNGGACNNGCTCCCTTTACCTNTTTNTNTTCTNTNGTGNCTCCTNNTNNTNNTCNNNGANT  
45 ANNNACANCNATNNCNTATNTNTNANCCCTTNCAGGTATTCTACCTNCTTNTCTACTANCTCCNTC  
CCCCNGCNTTCTAAATNTNTGTNTCCNTNNACTTNTNTNTCTCTCNTTNTNNGCNCCTGTANNNNTT  
NCTCNCNTCTCGNCTNNTNCGNNTTNTNTANANTAATNNNNNCTTTGTTCTCTNTCTNCCGTNCN  
NCNNTNCTCCNCCCATNTNTTTTCCCCCCCCCNCNACTCTCCTTTATCCTCTTTTCTNCTGCNCCTA  
NTGTTNAAATNGNACCNCCTCTNCTNCCCTTCCCNCTGNTNAGTCNNCATCNCNCTNTATTNTNTTCTNT  
TNTTTGCTNCTCTGATTNCTANCNTATCCCTNNGTCTCNCNNTTCATTNANCNNNNGAATNTCCTC  
50 TATTAANNACATNNCGNTCTTCCNNTCCNANCTCNGACTNGTCTATTNTNGCANCCNCTTNTCATCT  
TNTCANNNTCNTNCANACTACTNTCNCNANCAAACTCATNTNCTNCCNCGCNTNTNTCTNCCNANC  
AGCNTTNNNCNNGTCATTTCGTGCCTTGANANNNTCTAGTCTATANCTTTTCTNGTCTCGGTCTTGATT  
CNCCTTCTCCTNNTTGTACTTNTTCTCNCCTGTCACTCATCTNNTNTNTNNTAGTGTGCGNCTGNNATN  
ATNCTCNCCTTGNGACTNTCNCNCTNTATGTATANNCN

GGGGGGGGTNCNNTNNCCGNNANTNTNNNTTNTNNNNNTNNNNNNNCNCCCCCTCNNTCNCNTTANN  
 NNATGGNNTGGNANNANTCNATNTNAGGGNGGNGNNCNNNGNCCNNCCCNTTTGAAACCNNGGNC  
 GCNNACANGGCGGCCGCTCTATAACTAGNGGATCCCCCGNNCTGCAGGGCTGNGNCACGAGNTAATT  
 CCGGTTGAGTGNTGGGTGTGCAGCTGCAGNGGGGACANNTGTATNCAAGTGAGNNCTGGATCCAACG  
 5 NTCNCGAGNTATTGNGNGTCCGTACNCTTANCCAGACNAGNCNNCAAGANCNCNTATTNCNTGNGCTT  
 CANAGGTGCTNCAAGGCCCGNCGAGCCTGGCTCNTGGCNCNTGGGGCAGNTGNGGAAANTTCNGGAT  
 NCCCCCTATACNGGNTNACTCNGGANGGTGNGNNGNNNATCGGNGTTGCTGAANCTCTCANCCGAGN  
 GTCCTACCTTCTNTTANCCNTNTAAACCCGCTTCTCNCNGACTTTCTTNTNTNTTTNANNCTACCCCTNG  
 10 TGNNTTGCCNGGANGNCNAAATTANGAATTGGTNCAAGGCANGGCCNCCANNNCNCAANNNGNAGNNT  
 CNGAGACCGNCCCCNGNTGGGNCNCCNNGNACACAANNNGNGTANCATGNAAANCCTNNGANA  
 ANANNGNTTGAGNNGCCTTGCCNGGGANACNTCCCTTNTNCANTATNANCNNTCTCNCNNANNTT  
 NNCNNNNAGNGAACTGTCNNTCTNNCCNCCNCAAGNGGACNNATNNTGNNACANNNGGNAGGAGN  
 TGNAAGACNNNNTAGNANNCTTGNGNGANNNTCTAAGTNCNGCNCNNANCTTGTGNCCTGTNNTNNA  
 NGNTNCCGNTACTTNNNNNNGGACGNCNCCGNCNCNCTNNTGCGNCNCTNTAGTATNCCTNGG  
 15 GGCNNGNTGTGCGAGGANTTCCNAANCAANATNNAATNGAGANNNTNTTCCANNNGNTNTTTACCTC  
 NNTAGTNGTNTNTCNTATNACGNNCCNCGGANTATNNTTTGNNAGGTCNTNNNNATCCNAGGNNCTC  
 CACCTGTGGNACCNCNTNNAATNNNNNGNNTCCAGNCAATGAGGNATANGGNTTATCCCTTNAN  
 ANATNTNTGTNTGANGNTNNGTGNCCNCTANNGATANAATGNCTCCTCTACNCCGATATCNANTNCAN  
 NGTNTGTACATNNTCNTNAAGGNACANATATTAGGCGCTTTNTACCATCTCNCNACTANTTANNNGCCA  
 20 CTNGNGCGNNTCTGCGNGCGCTCTCTATNATTGACTACGCGGNTCNGAGTNGNGNAAATCTCNAN  
 CGCTNCANTTACGGTAGNCGGNANANNGANCGAACNGNTCTNNGGTAGGACGCGGGNTTGATGTANNG  
 AAANNTACACAGACNNTTGCGGGGGAANNTNTGNTCGNTCNTNTCNTACNAAACGCTNANNTGGCG

GGGGGGGGTNCNNTNNCCGNNANTNTNNNTTNTNNNNNTNNNNNNNCNCCCCCTCNNTCNCNTTANN  
 NNATGGNNTGGNANNANTCNATNTNAGGGNGGNGNNCNNNGNCCNNCCCNTTTGAAACCNNGGNC  
 GCNNACANGGCGGCCGCTCTATAACTAGNGGATCCCCCGNNCTGCAGGGCTGNGNCACGAGNTAATT  
 CCGGTTGAGTGNTGGGTGTGCAGCTGCAGNGGGGACANNTGTATNCAAGTGAGNNCTGGATCCAACG  
 25 NTCNCGAGNTATTGNGNGTCCGTACNCTTANCCAGACNAGNCNNCAAGANCNCNTATTNCNTGNGCTT  
 CANAGGTGCTNCAAGGCCCGNCGAGCCTGGCTCNTGGCNCNTGGGGCAGNTGNGGAAANTTCNGGAT  
 NCCCCCTATACNGGNTNACTCNGGANGGTGNGNNGNNNATCGGNGTTGCTGAANCTCTCANCCGAGN  
 GTCCTACCTTCTNTTANCCNTNTAAACCCGCTTCTCNCNGACTTTCTTNTNTNTTTNANNCTACCCCTNG  
 30 TGNNTTGCCNGGANGNCNAAATTANGAATTGGTNCAAGGCANGGCCNCCANNNCNCAANNNGNAGNNT  
 CNGAGACCGNCCCCNGNTGGGNCNCCNNGNACACAANNNGNGTANCATGNAAANCCTNNGANA  
 ANANNGNTTGAGNNGCCTTGCCNGGGANACNTCCCTTNTNCANTATNANCNNTCTCNCNNANNTT  
 NNCNNNNAGNGAACTGTCNNTCTNNCCNCCNCAAGNGGACNNATNNTGNNACANNNGGNAGGAGN  
 TGNAAGACNNNNTAGNANNCTTGNGNGANNNTCTAAGTNCNGCNCNNANCTTGTGNCCTGTNNTNNA  
 NGNTNCCGNTACTTNNNNNNGGACGNCNCCGNCNCNCTNNTGCGNCNCTNTAGTATNCCTNGG  
 35 GGCNNGNTGTGCGAGGANTTCCNAANCAANATNNAATNGAGANNNTNTTCCANNNGNTNTTTACCTC  
 NNTAGTNGTNTNTCNTATNACGNNCCNCGGANTATNNTTTGNNAGGTCNTNNNNATCCNAGGNNCTC  
 CACCTGTGGNACCNCNTNNAATNNNNNGNNTCCAGNCAATGAGGNATANGGNTTATCCCTTNAN  
 ANATNTNTGTNTGANGNTNNGTGNCCNCTANNGATANAATGNCTCCTCTACNCCGATATCNANTNCAN  
 NGTNTGTACATNNTCNTNAAGGNACANATATTAGGCGCTTTNTACCATCTCNCNACTANTTANNNGCCA  
 40 CTNGNGCGNNTCTGCGNGCGCTCTCTATNATTGACTACGCGGNTCNGAGTNGNGNAAATCTCNAN  
 CGCTNCANTTACGGTAGNCGGNANANNGANCGAACNGNTCTNNGGTAGGACGCGGGNTTGATGTANNG  
 AAANNTACACAGACNNTTGCGGGGGAANNTNTGNTCGNTCNTNTCNTACNAAACGCTNANNTGGCG

NAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGNTG  
 50 GTGATTCTNAAAGCNCNNNNCANCCATAGCNCGGTGNGAACTCAGCGCGACANATTCGTGCTGTATATG  
 ANACTGGCAGNTCATTGAGGTGGAGAGAACAAGAGCTTGCCCTACTTTGCGNCANAATATCNGNTCN  
 NNNTTCTNNNNAAACANNGTNNNNANNCNCNACNAATNCAATGTCAGGTNTTAATCCTNNNCTGA  
 AGGANTACTGNCATCANTTATTTATTACANTCATGAATCTGAAACGNTATTAAANGAAAAGCCTAATA  
 ACNACNCTTCTCTACAACNANAAATCACCNNGGCCATAGCNAAAAACCNCACTGTATTTGNCGGCT  
 55 GGAATCTTGGTTGGACATTCTCTNANTATTCTGACACCNCGNAATNCCCATTTTTTGNNGGANTCTTTNA  
 GAAANTTATTNTTNTATGNACACATTCAAGCAGTTGGGNACCTTCCTTCNCGCACCTTAAACACNC







GNANACAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGC  
 5 ACNAGNCGNNCTTCCTTNNGCTGGNAAAGTNCNTGTNCGNACACTGAGTCCTGCTGTGTATNAAG  
 GANACATTGCCTCNGGCTGAATGAAGCAGGGTTTGTGAAAAGTGCTCAGAAACCACAAGTCCCTGTG  
 CTTTCACAGNTTTTGGAGCTTTTCCTTTTCACTGGAGACTTTCTTCTGTTTTNAATGGGGCTACTGTG  
 TGGCTCANAAATGGCTGCTGTGATGAAAAATGCTCATTTGTAGGAAAAAGAGGTAGCTACNTTCTCAT  
 TTTGAAAGGACCATGAGCTATTTAAAAAANAAACNNAANANGNGGTTTTATTACNTGNCAGGGGAN  
 10 CNTTNGATCATGTTACATGGTTTNAANAANANCANTTTTTTTTCTNCTTTTANGGGTAAAAACAA  
 AAAAATTTTTNTTTTTNTNNTNAAAGNCCCTTNTAGGNAANAAAGGGATGCNTAACCCGAANGGTTA  
 GGNACCCCCAAGTTATTCCTNGTNAAGACCCATAATTTTTTGNAAACNGGAANCGGGGAAAAACAA  
 AGTGCTCCCNAAAATNTAANAAAAGCCCNTTACCTTCGGATTTGGNAAATNNAAAACCTTCTTTTT  
 AAAAAAAACCCNTTTTTTTTTTAAAAAANAAACCGGGGGGGGGCCTTAAAATTGGGTNAAANGCCCAAA  
 AAAAAAATTTCCCGNGGGGATTTTTTGGGANNAAAAACCATNNTTTAAAAACCTTTGAACCCCTGGAA  
 15 AATTCCTTNTGGCGCGGGGGGCAAAATTTCAAAAAACCTTTTAAATCCCCAAAATTTTTTGGNGNGG  
 GGAAACNNTTGTTTTTTCAAAAATTTTCNCCCAGGCNNGGGAAAAACCCCNCGGGGGTTTTNTNNAAN  
 AAAANANGGGNNCCCCCT  
  
 20 TTGAANACATNTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 TCTGCAACCATGTNTGTTTNNCCCGATATGGCTGANATTGACAAGNTCGNTAAGNTGAAATTGAAGAA  
 AACGGAAACGCAAGAGAAAAATCCACTGCCTTNGAAAGACACGATTGAACAGGANAAAGCAAGCAGG  
 CGAGTCGTAATGAAGCGTGCGCCGCCAGTATGCACTGTACATTCCACANGCATTGCCTTCTTATTTTAC  
 25 TTCTTTTAGCTGTTAACTTTGTAAGATGCAAAGAGGTTGGATCGAGTTTAAATGACTGTGCTACCCCT  
 TTTCACATCAAGAATGGAGAATACTGACAACGTAGGCCGCGCCTGCCTCTTCCATCTGCTGTGTGG  
 CTGGCAGGGAAGGAAAAGAACTTGCATGTTGGTGAAGGAAGAAGCTGGGTGGGACCACAGTNAAATC  
 TAAAGTAAAAAGCTGGGCCAAGGTGTTCTGCGGGCTGTAAATGCAATTTAATCAGANTGCCATTTTT  
 TTTTGTGTTCAAAAAGANTTTAATTATTGGAATGCACAATTTTTTTNTTATGCAATAAAAAAGTTTTTA  
 AAACCTGAAAAAANAAAAAANAAAAAANAAAAAANAAAAAANAAAAAANAAAAAANAAAAAANAAAAA  
 30 NNTAAGGGGGGGGNCNNNTNAAANNN  
 CNNNNNCCNNNNNNNCCNNNNNNNCCNNNNNNCTNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
 NNNNNNNNNNNNTNNNNNNNNCCCCCNCNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
 NNNNCNN  
 NNN  
 35 NNN  
  
 NACAAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGTCTG  
 CNACCATGNCTGACNNNCCNGNTATGGCTGAGATTGAGAAGTTNGATAAGNTGNAATTGAANAAAAC  
 40 GGNAACNNAAGAGAAAAATNCACTGNCTTCGAAAGAAACGANTGAACAGGAGAAAGCAAGCAGGCGA  
 GTCGTAATGAAGCGTGCGCCGCCAGTATGCACTGTACATTCCACAAGCATTGCCTTCTTATTTTACTTC  
 TTTTAGCTGTTNAACTTTGTAAGATGCAAAGAGGTTGGATCGAGTTTAAATGACTGTGCTACCCCTTTT  
 CACATCAAGAATGGAGAATACTGACAACGTAGGCCGCGCCTGCCTCTCCCATCTGCTTGTGTGGCT  
 GGCAGGGAAGGAAAAGAACTTGCATGTTGGTGAAGGAGGAAGCTGGGTGGGACGACAGTGAAATCTA  
 45 GAGTAAAAAGCTGGTCCAAGGTGTTCTGCGGGCTGTAAATGCAGTTTAAATCAGAGTGCCATTTTTTTT  
 TGTGTTCAATGATTTTAATTATTGGAATGCACAATTTTTTTTATTATGCAATAAAAAAGTTTTTAAAC  
 CTGAAAAAANAAAAAANAAAAAANAAAAAANAAAAAANAAAAAANAAAAAANAAAAAANAAAAAAN  
 GGNGGNTTTNN  
 NNN  
 NNN  
 50 NNN  
  
 NAAGCNCNTTNNNTGTNGGTCNNNTNGNAAGGGGGNANTACCACTTTTAANAANNTAGGTNGGCA  
 ATCCCCCNGNTCTTGCTCTNCTNCTGCNCCCTNACTAGTCTTTTTTTTNNCCCCCTTNCNTNGACCCANT  
 55 TNCCAATNNAATTANNGGGNTCNANTTTTAANATTNTTTNANCTATCCCTNAANNCCNCCGNNCCNTNC  
 TNANCTTCTCNCTNCTNNNNNNATCCANANNNCNANCATGNGAGGATGTAGNANNNGNNNNNANNG



AAANNACCNATAACTTTNCTTNTNCCCCGNAGGGNANANTNGTGCTNNNGTNGAATCANCNANNCCNGN  
 NANNNTNAGANNNNNNANNNCNACCCCGANTGCTNNNGGGNATNAGNTCNNCCNGGGATNCATNNN  
 GNGTCNCGNAANNCTATGGAGNCNNAACNNNNAGANNNTANNANNANNCCNNNNNNNNCNCNCCNGTAA  
 5 GCGAGNCATGTNNNATTNTCATNGNNTNCTTTAGACTCCAANANNNGNNNCCAANACACNATTNANNC  
 CTACNTCNANNANCGNNNATNTNTGTNNGCNNNGGTNNNNNGNNGNNAAGGNATTATACNNNN  
 NATTNTGNTAGANACANAGGCTTGTGNNTANNNNNANNNNNNGNNTGTTCAITNTNANTCGAANGANA  
 NTATNTNGCAGNANGNANNNNNGAGTNNNNNGNTNANTGATNANCCCNGNNCANTATACGGATTNA  
 NNNCTATCANANNCCNGNNNTCANGNNNANTNCNGACNCNGGCNNCAAGNCCCCNGNNNNATT  
 10 NNCTNAAAANANCNAAGNNTCNNNANNGGANNGGGCGAANANTNNNNGCNNCAGGTAGNGNNNCT  
 CNNNCNANATTTCAATGTCTGCANNGCCCNCCNNGNGNACCAGTTGTTCCANGANGTGCNNCNGNC  
 NGCNNTANAANAANCTNTNCNNCGTGNTNANTANGTGCAGGNCGNATGGTNNNNNNCGCATNTC  
 GGANANTNGNNGCNAACAGNNTCGCTGNNNGCNCNCTGGTGANGGAGCAATCNTCGNNTNACATA  
 NCNTNNNTNNANAGTANCCAAGAGCNGNNATTGTCTNNNNNGNCAGTANNANNTGCGTCANNTNNGC  
 NGNGNNNTTNTNCATNCGNTATATGTACNATGCNGAANNNCACCNCNCTNTCANNNCTGCNTCNGGT  
 15 TNNNTTATCATAGCNANCGNCCNGCGANACNATCNAAANTANTGAGTNCNANNNCNAGCNATGNAT  
 CNATAACGAGTNTGNNANNAGANTGTNGNANNGCCNNANANCTATCGNGANAGNATANAGTGNTCG  
 NT  
 20 TTAANNCNTTTANNGGANNNNTTTANNNAGGGNATTACACTTNNACNCTTGTGGNTCCCCCGGGCTGC  
 AGGATCCNANNNTCCGNACCAGTTNTNNNGCTCGAGACATGAGTTNGGACCTGAGGGGCACCGGGATG  
 ACNNTGNATTTNCTTTGCANNATNAGCCATGAATTTCTNTCCNGGGNATNNNTNAGCATGNNGAAN  
 NNTNNGTCTAACC GGGNATNNNTNNNCNATNTANTGTCNNNATNCNNGNNCANNNNNNCTNNNGNN  
 25 NNNAAANNANTNTCCTAAACTCTNNNTNCNNNTGTNNTGNAGNNNCNCGAGGANTTATCAANNNTGGN  
 NANCNAGTNTTCATTGNCNNTTTGCNANCNNNACTGNCNGTATNNNAGNNNNANATCCTNNAATAA  
 NNGATCNANNACCANNCATANTCGTATNTTNTNANNCCTNACNNAANCANCCNNNTAATTCNNN  
 NNNTCATNTGTNNNNCATATNGNCNACNNNNATCNNNTTNGANCNNNNNGATNNTTCAACNTANNTCN  
 ATTGTNTTACTGAGNNAAGANNNGTTNNACNTNANTNTATNNAGNNAAGNNNNCTCTGANNNNTGT  
 30 CNNTGTNNTGTNNGTTNAAANNNCTNCTTTNTNANCNCTCNCTTANGANTCNTANGNTATTATTNCC  
 AACNTNTTTNCGGNTTCGTANANNTANNATTGGANCACTNTTCGTNGTAGANNNAANATCTACGT  
 ANNNAATTNANNTNNNGANCATAAANNCCCCGACCNCACGNANNNNNNCNCNCCNNGNNNGCANTGTG  
 ANCATANAATACTGANTNANCNNNTTANTTTNNNNNATAAANNCTNNTTGCNANCACTANACCCNNNN  
 CNGACCNCNAGGNATCTAATNATNNANTNNNGTGNNGNCTNNNGAANANTNNCAGANNCTCNNTG  
 35 NNCAANTNCNNCNCAATTACCNNCNAATCTTNTCTNATGCNATTAAACNTNTGTGANGTAANN  
 NNTANCGTGTGCTCCTCNCNANNAGANNNCNANNNTACNNCNATCTANATNAGAGATNAAACNTNT  
 NTACACTNCNTATANTCCTCCTCNCNAGGTAGAACATGANNTNTCCTNGNTACNACCCNATGNNGAN  
 TTNGGCCGNNTANCGATCTNANAGCANGNAAGNANTAATAGCATTNACTNNCGACTNANTANNTAGT  
 CAACNANNCCNCCG  
 40 GCCCTATNTGGAGCTNCANCNCNGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGTT  
 CTACCACTGACTCAGGCCCCGATCTTCATCTCCTTCTTCATTGCCTTGAGAGAAATGGCCAACCTTCCC  
 GTGCCAGCCTGCAGACAGGTGGTCTCTGGNGGTTCCAGGATCTCACACTATCTGACCCCATCTACGT  
 ATTACCTCTGGTGGTACAGCTACAATGTGGGGTGTCTTGGAGTTANGTGTGAACTGGCATGCAAA  
 45 GTTCTGACCTTCAGTGGATGAGAAATTTTATCANACTAATGCCCTGGCAGTCTTGCCCATAACTATCC  
 ATTTCCCCACGGCANTGTTNATGTACTGGCTCTCCTCCAACATGTTTTCCCTGGGCCAGGTGGNCTGTC  
 TCCGTATTCTGTGTACGCACTGGACTGAAAATTTCCCNACGTGTTGTGCACGACCCANACAAGNTA  
 NCTCCACNAGAAGGCTTNTCTAAAGAGCTTAAACAAGGCTGGANGAATGCCGAAATGGCCCATCAGC  
 TACAGGAACGGNNAACGACNTATGCAGAAACCACTGGGAGCNCGCTGCCAGGGGTTGCTACGACA  
 50 GACGTTTGGCCACAACNCCTCTGNNGCAGCATTGGAAGAAATGACCCTCCCAACACCCCTAACAGG  
 CAGCAGCANGCAGNGGGCNGNAGTAANCAAAAAGNCANAAAGTCNAAAGCAACCCCTGNCGTTGACAC  
 CGCTTTGGCTTGAANCCTCTGGTNGCCTTGNNTCACAACCTNGGGNNAGGGAACTTCNTTTTTTTTTT  
 NAAAAAACTTNANCCCTTTNAANAACCGAATNTNCATGGCNGGGGGNTNTTGGCGCCAGAACCCCT  
 55 NAAAAAACTGGNGGGGGACATTACTTGATGGTTNCATNTTTAAAAAAATGGGANTGCTNCNTACAAG  
 AAANTCTTTCNCCNTGGATNGGC



TTNAGCCCTATAGNGAGTCGTATTACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTNGNA  
 GGATTGAACGGNCTGCTACCCCCGGCCGAGTGTGGNGTGCTGCTGCANCTGGCCAANGATGCNGNTG  
 AAGCTGGAGCCAGGGCTGGCTATNGGGGTATCGGTNCCCACACACCCCCCANGAACGCTTTGAGGG  
 5 GCTNACNGNGCTNAAGGCCGCACANCTGGCCCCGGGCTGGGGCGGTGGGNANTCAGGGTGCCCATCTG  
 CTNTCTGGAGGTNANCAAGCGGGTGCGGAGCCTAACCCAAGGCCTANTTTCCCCCGACCGGGCCCTGC  
 ATNTCTCCTTAACCCACCTGNNGTGCCGGAGCGCCATATAAGGGGAGCAGGCGCACTCGCATGGACCT  
 GAGCCACCCGGTGACGCCGACAACCTGTGTGCTGGATCCTGACACCGGGGAGTGCTGGCGGGAGCCC  
 CCANNCTACACCTATNGAGACTACAGTGGACTCCTCTACTCANCATGACTTCCAANGGCGGGGACCT  
 10 GTTCTTTTCANGGAGCCCAACGCCCTCACAGTAACGGCACAAGTTCTNTCCTCGCTGCNGCCGNCTCGTG  
 GCTTCAGCTNAGGCGNGGAANAATNCCCACGGTGTGTNGNGCCCGTNANNCCCCGGCCGGGNGCTT  
 GTNCCCCTGGCAACTTNNNGCAAAACCTTGNGNCCCCTTGANCAAAAGGNAGCCANGAAGTNGGAT  
 GGAAGCCCANANNAATTTGCNTGTNTNGGGCCCCNAAAAAAGGATGAAANGGANNAAGATTGT  
 NNTCAGCCANGGGAACCCCNNTNCAAAAAACCCCCAACCCGAANGNCTTTCCNTGGGTTTCCAGG  
 15 AAAAAAGGTTNGGGGAAANCCCCCTNNCNTTTTCAAAAGGAAAATTTTNAAGGGGGCNTGGCCCCA  
 AAAAACTTTTGGGGGAATTTGGCNCNNTTNAATTTGNGGGNGGGG

TTNAGCCCTATAGNGAGTCGTATTACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTNGNA  
 20 GGATTGAACGGNCTGCTACCCCCGGCCGAGTGTGGNGTGCTGCTGCANCTGGCCAANGATGCNGNTG  
 AAGCTGGAGCCAGGGCTGGCTATNGGGGTATCGGTNCCCACACACCCCCCANGAACGCTTTGAGGG  
 GCTNACNGNGCTNAAGGCCGCACANCTGGCCCCGGGCTGGGGCGGTGGGNANTCAGGGTGCCCATCTG  
 CTNTCTGGAGGTNANCAAGCGGGTGCGGAGCCTAACCCAAGGCCTANTTTCCCCCGACCGGGCCCTGC  
 ATNTCTCCTTAACCCACCTGNNGTGCCGGAGCGCCATATAAGGGGAGCAGGCGCACTCGCATGGACCT  
 25 GAGCCACCCGGTGACGCCGACAACCTGTGTGCTGGATCCTGACACCGGGGAGTGCTGGCGGGAGCCC  
 CCANNCTACACCTATNGAGACTACAGTGGACTCCTCTACTCANCATGACTTCCAANGGCGGGGACCT  
 GTTCTTTTCANGGAGCCCAACGCCCTCACAGTAACGGCACAAGTTCTNTCCTCGCTGCNGCCGNCTCGTG  
 GCTTCAGCTNAGGCGNGGAANAATNCCCACGGTGTGTNGNGCCCGTNANNCCCCGGCCGGGNGCTT  
 GTNCCCCTGGCAACTTNNNGCAAAACCTTGNGNCCCCTTGANCAAAAGGNAGCCANGAAGTNGGAT  
 30 GGAAGCCCANANNAATTTGCNTGTNTNGGGCCCCNAAAAAAGGATGAAANGGANNAAGATTGT  
 NNTCAGCCANGGGAACCCCNNTNCAAAAAACCCCCAACCCGAANGNCTTTCCNTGGGTTTCCAGG  
 AAAAAAGGTTNGGGGAAANCCCCCTNNCNTTTTCAAAAGGAAAATTTTNAAGGGGGCNTGGCCCCA  
 AAAAACTTTTGGGGGAATTTGGCNCNNTTNAATTTGNGGGNGGGG

TNNNNAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GCGCTGCCAAAGCAGGAGACACAGATTTCATGCGGGAAGATCCCCTGGAGAAGGAAATG  
 GCAACCACTCCAGTATTCTTGTCTGGAGAATCCCATGGACAGAGGAGCCTGGCGGACTACAGTCCGT  
 40 GGGGTACAAGAGTCAGATAGGACTTAACAATAAACAACCTATATTAGAAGGTTGCCACT  
 ATTTTTTCCAAGACAGAGCCAGTCACTCGCGGANCAACTTNGATGTGGCCTGTGTGCTAACCATTCN  
 TAAATGCCTGATGGCTAACNTGTGAAANCAGAANTTTCCCATTTGTTGAAAAGCCTTTTGGCNCGGC  
 CTTTCCNATCTTATTAACCAGGCACCGTTGGTTGGAAAAAGNGAGGNCAGAAAGCCAAAAGGGGCTTGT  
 GGTGGAAAGAATNGAAGCTTNAATTTNACGCCCTTCTAACAANCTTTGGGGGAAGGGTTAAGGGAACC  
 TTGGNAATATGNAGTGGCAATNGGNAANGNAATNCCTTGGAAATAATTGGGNCCCCNTTNTTTTTT  
 45 TCTTCCCCCAACCAAAAANACCNTTATTCCTTTTTTTAGGGANGCCCCCCTTGGNAAANAGGAGG  
 GNGTCAAAAAATGTAAANCGGGAACCTTCTGGTTTCAAACCNAAAATTTTTCANTTTAANTTTTNAATN  
 GGCCNTTNGNGGAANCCNAAAAATTTGCTTGCCTGGNCCTGGGAATGCTTTTNCAGNNNAAGCNT  
 TTTNTTTTAATTTTTTTTNAAACNCCCTTNCCTTAANGGCCNGGGGGGGGGCCNCCCCCAACCCNTTTT  
 TTTACCCTTGCCCTTTTGGGGGNAACAGGNAACCAAAAACCCCCCTTANGGGGTGGNNTTTTGGTTT  
 50 TACAAAACTNNGGTTGGA

TTNANCAAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGC  
 55 GCCTGCCAAAGCNGGAGACACAGATTTCATGCGGGAAGATCCCCTGGAGAAGGAAATGGC  
 AACCACTCCAGTATTCTTGTCTGGAGAATCCCATGGACAGAGGAGCCTGGCGGACTACAGTCCGTGG  
 GTTACAAGAGTCAGATAGGACTTAACAATAAACAACCTATATTAGAAGGTTGCCACTATT

TCTTCCAAGACAGAGCCAGTCACTCGCGGAGCAACTTTTGATGTGGCCTGTGTGTCTCACCCTCCTAG  
 ATGCCTGAGTGCTTACATGTGAAAGCAGCAGCTTCCCACTTGCTGGGAGAGCCTTCTGGCACGGCCCT  
 TCCGATCCTACTAAACAGGGCACGTGGGTGGGAAGAGTGAGGACAGGAGGCAAAAGGGGGCTGGTGT  
 GGNAAGGANTGGAGGCTGATCTCAACGCACTCCTANCAGCCTNTGNGGAAGGGTCTCAAGTGACCCTT  
 5 GANATAGTGAGTTGCAATGTGAAANGGAAAGCCTTGGGATCATTGGGGCCCCCTTTNTTTTTTCTT  
 CNCCCCCCCCAAATACACTTTATTCTTTTTTTTGGGGGAGCCCCCGGGGGGAAANAAGNGNGTTT  
 CCAAAATTGTNANGNGGGGAACNTCNNTGGTTTNAAAAAAAAAAAAAATTTNATTTCTTTTTTTNNGGG  
 NNNNNNGANGGAAAAANAATAATTTGNTTGNCTGGGCCTNNGGGATTGTTTTTTCAGGGNNAAGGN  
 TTTCTTTTTTAAATTTTTTTTAAACNCCCTTCCCTTAAAGGGGGGGGGGGGGGGGGGTTTTANNNAAAA  
 10 CCNTTTTTTTACCCATGGCCTTTTNGGGGAAANAGGGAATAAANCCCCCCCNNGGGGGGTGG  
 NTTTTTTTTNNTTTTCCCAACNG

ANACATNTGGAGCTCCACCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGTTT  
 15 CCAGGACAGCTGATGGGAGAGGAAGCTGGGTGTCTCCCAAGAGTCCCAGGCTGCAAAGGGGAGAGAG  
 CTGACCCTTCTCAAACCCCTGCTTTGGGGCCAGCCCTGCGCCAGGTGCTTACAGCTCTTATCTGCCAG  
 ATTTTCCCACCTTGTGGCACATGGCGCCCCCTAACCAACATCCCAAGAGGCCGATCACCTTGCCACATCT  
 GTGCAAGACCTGGGACCACAGGCGTGGACAGGAAGGGCTCCGAAGCCCTCTTTTACAGATGAAGAT  
 GCCAGGGCCCAGGGAGGATGAGCAGTCTTTGGGGTTACCCAGCCGGAATACTGGGAGACCTGAACCC  
 20 AGCATTCTGACTCTGCATTCACTGCTCGCTCCATGATGCAGCGGTCTAGCCCCCCCCCTCAAATGGGTG  
 CCCTCTTCACTGTGTTTCCCAGCATTCCTTGCTCTGACCAAACCGGGGAAGGGACACAGCCCACCCCA  
 AAAGATGGAATCATTCTCTTAACCGTCTTTGTCCCAACTGGCTGNCACTCCAAACCCGTCCCCCTGGCC  
 CCTGACCTTGCTGGGTGGGGAAGAGCTACGTNNGGGCCAGGCTGAACAATGAATGANCATGTCAAG  
 CTGTCAAAATNTTGGGAAATAAGNGCATTCTACTGGCAACCCGCCTTCTGATCCCGNCTGGATTTGN  
 25 ACCATAAAGNGACATGAGAAGCCCCCTGTGTNTGTTTTTGTGTGCCCCCCCCCCCCCGGGGGNNTNC  
 CNTNGNNAGGGGNTTGGNANNTTTTTTGGTTTTTGGAAAATTTGAAAGGGCCCCAAAAAANACNGG  
 GGGGTTTCCTTTTGAAAAAAAAAAAAAAAAAAAAAANTTNGGGGGGGGGGGCCCCN

TTNNACAAACTGGACTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGT  
 30 TTCCAGGACAGCTGAAGGGAGAGGAAGCTGGGTGTCTCCCAAGAGTCCCAGGCTGCAAAGGGGAGAG  
 AGCTGACCCTTCTCAAACCCCTGCTTTGGGGCCAGCCCTGCGCCAGGTGCTTACAGCTCTTATCTGCC  
 AGATTTTCCCACCTTGTGGCACATGGCGCCCCCTAACCAACATCCCAAGAGGCCGATCACCTTGCCACA  
 TCTGTGCAAGACCTGGGACCACAGGCGTGGACAGGAAGGGCTCCGAAGCCCTCTTTTACAGATGAAG  
 35 ATGCCAGGGCCCAGGGAGGATGAGCAGTCTTTGGGGTTACCCAGCCGGAATACTGGGAGACCTGAAC  
 CCAGCATTCTGACTCTGCATTCACTGCTCGCTCCATGATGCAGCGGTCTAGCCCCCCCCCTCAAATGGG  
 TCCCTCTTCACTGTGTTTCCCAGCATCCTTGCTCTGACCAAACCGGGGAAGGGACACAGCCCACCCCA  
 AAAAGATGGAATCATTCTCTTAACCGTCTTTGTCCCAACTGCCTGCCACTCCAAACCCGTCCCCCTGGC  
 CCCTGACCCTGCTGGGTGGGGAAGANGCTTACGTGGGCCANGCTTGAGCAGTGAATGAACATTGTC  
 40 AAGCTTGTCAAACTTTTGGGAAAATAANGCATTCTAACTGGGAANCCCGCTTNCCTGATCCGNTGGA  
 TTTTGGNCNTTAAAGGGGACTTGGAAGCCCCCTGNGGGGGGNANATGGGGGGCCCCCCCCCCCCCG  
 NGGGGAAAACCCCTAAGGANANGGGTTTTTGGGACACCTTTTGGGGTTTGGGGAAAATTTGANAGNG  
 CCAAAAAAAAAACCNGNGGGTTTTTTTTTTTNAAAAAA

TTNNNCAAANCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGG  
 45 GCGTCAAGGTTCTCCGTGGAGTTGGAGCTTTGGCCTCCCAGGCCCTGAGGGCCCCGGGGTCCAAATGGA  
 GTCTCCGTGGTGCCTCTATGGCGTCTGGAGGTGGTTCCTACTGATGAAGAGCAGGCGACTGGGCT  
 AGAGAGGGGAGGTCATGCTGGCTGCTCGCAAGGGACAGGCCATACAATATACTTGCCCCAAAGGCA  
 50 ACCTCAGGTACCAAGGAGGACCCTAATTTAGTCCCCTCCATACCAACAAGCGGATAGTGGGCTGCAT  
 CTGTGAAGAAGACAACAGTACTGTCTGTTCTGGCTGCACAAAGGCGAGGCCAGCATGCCCA  
 GCTGTGGAACCCATTACAAGCTGGTGCCACACCAGCTGGCCCACTGAGCCACTGCACTAATGCACTCA  
 GAATATGATGTGGAATTTCTTCTTTCCAGTAAAGACTAGCCATTACATTGGCTTCTCTCCCATANAA  
 AAAAAAAAAAAAAAAAAANCCCNNGGGGGGGGNCNGGCCCAANTTCCCNTATNGGGNGNNNNNNNA  
 55 NANNN  
 NNN



TTNAGCCTATAGNGAGTCGTATTACAGTGGCGGCCGCTCTAGAACTAGTGGGATCCCCCGGGCTNGNN  
 GNATTTTCGGCACGAGGCCCGTCTCCTGTGTTAGGTCTGACCTCCGGCCGATCGTCCGCCGCCGCACGG  
 NTTGCCGCCATGGCCCTNANCGATGCCGACGTGCAGAAGCAGATTAAGCACATGATGGCTTTTATTGA  
 ACAAGAAGCCAATGAGAAAGCAGAAGAAATTGATGCNAAAGGCAGAAGAAGAGTTCAACATTGAGAA  
 5 AGGTCGTCTTGTCCAAACCCAAAGACTGAAGATTATGGAATATTATGAGAAGAAAGAAAAGCAGATT  
 GAGCAGCAGAAGAAAATTCANATGTCCAATTTGATGAATCAAGCGAGGCTCAAAGTCCTCAGAGCGA  
 GAGATGACCTTATCACAGACCTACTAAATGAAGCAAAACAGAGACTCAGCAAAAGTGGNAAAAGATAC  
 AACCAGGTACCAAGTGCTGCTGGATGGACTGGTCCTCCAGGGTTTTGTACCAGTTGCTGGAGCCCCCG  
 10 GATGATCGTTTCGCTGCAGGAAAACAGGATTTTCTCTGGTGAAGGCTGCAGTGCAAAAAAGCAATCCC  
 TGTGTCCAAGTTGCAACCCAAAAAGANACGTTTGTATGTCCANATTGACCANGAAGGCCTTACCTTGNC  
 CCGAAGGAAGATANACCGGCCGGTGGTCCGAGAATCTATTAACCGGGGGACCCGCAAGAATCAAAG  
 GGTGGTCCCACCNCACCTCGAAAGGTGGGTTGGACCTTCATNAGCCCCAACCAATGAATGCCCCGA  
 ANGTTGGCGGGGGAGGCCTTTGTTTTGGTGGCAAATGCCACCAGGGAAGGTTTTTTGGACTTAACCCA  
 15 CCAGGAAGGTGCCTTGACCAAGGACCCCTCCCCTTNNTTTGGGAANAAAACNAAAATGGGCCCNGT  
 NTTAACCTTTCTTTTTTTCTTGTCCCCTTGCCCTTTTTTTTGGGNC

TNNNNAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GAATTCGGCACGAGGGCCGAGAAGGCAACATGGGTCAACAGCAGCTCTACTGGAGCCATCCGAGAAA  
 20 ATTCGGCCAGGGTTCTCGCTCTTGCCGGGTCTGCTCCAACCGGCACGGTCTGATCCGGAATAACGGCCT  
 CAATATGTGCCGCCAGTGTTTCCGCCAGTATGCGAAGGACATCGGCTTCNTTAAGTTGGACTAACCAA  
 ACTTCCTTANATGGNTCATCCAGCACATCANCCTTAGGCGGAAACAATNNTAGNTNTTTGTNTATAAA  
 ATAAANGTTTTCAAANCTTCAAAAAAAAAAAAAAAAAAAAAAAAAANCCNNNGGGGGGGGNCCGGGC  
 25 CCCNANTTCCCNNTNNNNGGGGGGNNTNAAAAANNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
 NNN  
 NNN  
 NNN  
 NNN  
 NNN  
 NGNNNNNCNNNNNNNNANNNNNNNNNNGNNNNNCCCCCCCCCCCCCCCCCNCNNNNNNNNNN  
 30 NNN  
 NNN  
 NNN  
 NNN  
 NNGGGGNNGNNNTTTNNNNNNNNNNANNNNN  
 NNNNNNNNN

TTNANCAAANCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
 ATTCGGCACGAGGCCANTCTCATCCCGTCTCTCCCTGGTTGTAAATTGCTGCACTGGTAACATCAG  
 40 GTAACTAGGAAAGAATCTGCCTGCAATGAAAGAGACTGGGGTTCGATCCCTGGGTGGGGAAGATCC  
 CCTGGAGAAGGAAATGCANCCCATTCAGTNTTCTTGGAGAAGGAAATGGCANCCCACTCCAGTANTN  
 TTGCCTGGANAATCCCNCTGGACAGAGGANACTGGCCGGTTGGAATAGGACTGACCACCTACCATTTTC  
 CCACCNNTTCCACTTGGAACCTTTCAGTNTTNGGAAGCAAAAAATGGACTTCAGGCTTGTTNGGAA  
 ATAACCTACTTTTTTTGNGGGAATNACCTTTTCATTTGNNAAAATAAAATANGGTTTTCTCNTTTCTGN  
 TTCNAAACCNNTAAAAGGGTGGAAGNAAAAATTTTCGACCTATGGTTATTAAGTNGATTTGNAATAT  
 45 NCCTTGAAAGCTTACCTTGGAACNTACCTTATANTTTNCNTGCCCAAATTTTGTGTTGTTTAAAT  
 ANAANGGAAAAAATGGATNTAAGTTAATTTAATAAATTAATTGGNCTGGCCTTGGGATTNAATCCTCN  
 CAGCAATCCTGGTTGGGNCTGGTTTNCCTATTTTGGATNGGGNAATGGNGGNCCCGGNAATTTTTTN  
 CTTTAAACCCCTGAATGCCANGTTAAAAAGGGCTTTCCTNGGGGGGGNCCCTTNGGGGNAAAAAAA  
 CCCCCCCTTGGCCANNANAACCTTAAAAAAAANGGGGGTTTGAANCCCCTGGGGCCCCCAAAAA  
 50 ACCCTTTGGGNAAAAGGNAANGGCAATANCCCCTCCCAAAANATTTCNCNCCCNGGGNAAANGNCCC  
 TTGGNAAAAG

GANACATTTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGTC  
 GGTCTGGGTGTCAANTGCTCCAAGGAAGTAGCCACTGCCATCCGTGGGGCCATCATCCTGGCTAAGTT  
 55 GTCCATCGTCCCTGTGCGAAGAGGCTACTGGGGGAACAAGATCGGCAAGCCCCACACGGTTCCCTTGCA  
 AGGTGACTGGCCGCTGCGGCTCCGTGCTGGTGCCTCATCCCTGCCCCAGAGGCACTGGCATCGTC

TCCGCCCCCTGTGCCCAAGAAAGCTGCTGATGATGGGCCGATTTCGACGACTGCTACACTTTTGCCAGG  
GGCTGCACTGCCACCCTGGGCAACTTTCGCCAAGGGCAGCTTTTGATGCCATTTTCAAGACCTATAGTTA  
CCTTACCCCTGACCTCTGGAAAGAGACGGTGTTCACCAAGTCTTCATATCAAGAATTCACTGACCATCT  
5 TGNGAAGAACCACACCAGAAGTCTTCGTGCAAAGGACACANGGCCAGCTGTAGCCACCACATAATT  
TTATAAAGGGAATAATTAAGGTGAATGAAACCAAAAAAAAAAAAAAAAAAAAAAACTTGGGGGGG  
GGCCCGGGCCCNATTTCTCTTTATGGGGGGGGNNNTNANAAANNNNNNNNNNNNNNNNNNNNNNNN  
NN  
NN  
10 NNN  
NN

TNNNAAAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAAGTGTGGATCCCCCGGGCTGCAGG  
15 GTCGGTCTGGGTGTCAAGTGTCCAAGGAAGTAGCCACTGCCATCCGTGGGGCCATCATCCTGGCTAA  
GTTGTCCATCGTCCCTGTGCGAAGAGGCTACTGGGGGAACAAGATCGGCAAGCCCCACACGGTTCCCTT  
GCAAGGTGACTGGCCGCTGCGGCTCCGTGCTGGTGCGCCTCATCCCTGCCCCAGAGGCACTGGCATC  
GTCTCCGCCCTGTGCCAAGAAGCTGCTGATGATGGCCGGCATCGACGACTGCTACACTTCTGCCAG  
20 GGGCTGCACTGCCACCCTGGGCAACTTCGCCAAGGCCACTTTTGATGCCATTTCCAAGACCTATAGTTA  
CCTCACCCCTGACCTCTGGAAAGAGACGGTGTTCACCAAGTCTCCATATCAGGAATTCACTGACCATCT  
TGTGAAGACCCACACCAGAGTCTCCGTGCAGAGGACACAGGCCCCAGCTGTAGCCACCACATAATTTT  
ATAAAGGGAATAATAAAGTGAATGAAACCNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
CCGGNCCCANTTTCCCTTNTANGNGGGNNNAANNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
25 NNN  
NN  
NN

TTNNCANNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAAGTGTGGATCCCCCGGGCTGCAGG  
30 CTATACATCACTGTTCTTTTGCTGTCTCGTACGCAGCATAGCCTCTTAAAATTGTATCCTGACAAAGAC  
CACATCAGCACATTACCCCGCACTGATCCACTAGATGGCGCTGTCTCAAGCTGGCAGAACACACCAGG  
TAATTTTTTGACAAGTCTTTCTGNGTCTCATAAAATAGAGGTAAAGCTAACATTCTTTACTGATGCGC  
35 AGTATCAGATATTTAACCTAAAAATTACCAGAGTTATTGTGCGCTGTTGCGTTGCTAGGAAATGTACT  
ACCATTACCCACATTGCACACAGCAGGTGTCTCGGAGCTCATTGTGTGCTCACAGAACGTGAAGCGT  
GGTCTTGTGGAGTAAATCCACTCGAGAACGAGGCTCTGAGGCTTCTCGGCTGCCTTCTGACTCCGTC  
CTGGGATGAAGACATCCAAATCATTTCTAAATGTTTTACTCTCACATAAAGTAAGCCATTTCTTGTTT  
TGTTCTCTGAGACAGACTTTTCTATCAACTCTGTCTGTGCTGCTGCAAGTTGAACGATTTTGTGTTT  
40 TTGATTGTCATTGAGGGTCCAGCAACGTGCTGTGGGGACGTCCCTGGTGGCCAGTGTTACAGAAT  
CCGACTGCCAACGCAGGGGACACAGGTTCAATCCCTGATCCAGGACGATCCACATGCCGCGGAGCA  
GCCGAGCCACGTGCCACTCAGTTGGCCCGTGTGCCACTGGTTGACGCCATGNAAACGAGAAGTCCTG  
GTACCCCAACNAAGAAGTANCCCCCACTTANNAACCAAGACTTGGNCCAACCCAAAANTNANTTAA  
AANTCCCNAAAAAAAAAAAAAAAAANCTNNGGGGGGGGGGCCCGGGCCCNANTNCCCCCTNNNNNGN  
45 NNNNNNNNNNNNNNNNAAANNNNNNNNNNNNNNNNC

GCCTATNNGGAGCTNCANCNCNGTGGCGGCCGCTCTAGAAGTGTGGATCCCCCGGGCTGCAGGATCA  
TATAGTAAACCCAAGCCCTTGACCTCTTACAGGAGCTTTGTCTGCCCTCTTAATAACATCCGGCCTAAC  
50 CATGTGATTTCACTTTAACTCAATGACCCTGCTAATAATTGGCCTAACAACAAATATACTAACAATATA  
CCAATGATGACGAGATGTTATCCGAGAAAGCACCTTCCAAGGGCACCATAACCCAGCTGTCCAAAAAG  
GCCTCCGTTATGGAATAATTCTTTTTATTATCTCCGAAGTACTATTCTTTACCGGATTTTTCTGAGCTTT  
CTACCACTCAAGCCTCGCCCCACCCCTGAAGTGGCGGCTGCTGACCCCAACAGGCATTACCCAC  
TAAACCCCTAGAAAGTCCCACTGCTCAACACCTCTGTCTATTGGCTTCCGGAGTTTCTATTACCTGAG  
55 CCCATCATAGTTTAAATAGAAGGGGACCGAAAGCATATATTACAAGCCCTATTTATCACCATCACATTA  
GGAGTCTACTTCACACTACTACAAGCCTCAGAATACTATGAAGCACCTTTTACTATCTCCGACGGAGTT  
TACGGCTCAACTTTTTTTGTAGCCACAGGCTTCCACGGCCTTACGTCATCATTGGGTCCACCTTCTTAA











NNNTNNNTANATCTGNNAACCNCCCNTTAGCTCNTANNNNNNTANNTNNNTGTGCGNCCNTNCATTTTT  
 NNTANTNCNNCANNTANNNATCTACNGANNTAATNTTNTTAANGTNTTTNNCTCCNGTNTCCCCNNNT  
 CNNNTNTANCNNNTNTCNTTTCCACTTCGGGCTTNGNNNNANACNATNCNNNTNTTCNACNCCTNNTC  
 CNNCCCNNTTNNNNTTCCCGNCATATTNTCTTTAANGTANACTNTNCNATANCTGTTNTTACTTNTTA  
 5 NGNTNNACCACATCTTNTCTGTAATNCCNACCTTTCNCCATNNANNCNNAACANCGANTTANNNTTTTT  
 NTNTNNCTTTTTTNCCTCTCTCCNNTNNTTNCNTTNNNTATCCTCNCNTNNCNATNNNTCTNTCNNNNCCC  
 TTNTTNNTTTCCTTNTNATATCTACGNTATCCNNTTCNATGTCNNACTCTGTATTTTATNNCCTTAAGAC  
 NNTCANCANTNGNATNTTTTNTNATTTNATTACTATCGCNNNNNNCCCNGNGCANCNTTNTNTTGGT  
 TCNNTCTCNCNTNNTTNAATCNANNNANCTATCTCTGNAANNTCNGCTTCNNTNCATNNNAANTNTNG  
 10 CCANCNATTNNGTGTAATNTNTATTTNTCACNTNNNTNAAATNTTNTNCTCCTNTANGANNNTCACAT  
 ATCNACNNNTNGTNGCTCNCACNTTNTATNTATCNTNTATATAGTNTNTATATNGATTGTTCTN  
 TNANGATATGCATANNTNTGNTCATCTGTTATTGCACCTCGCNANACTNNTNNGTANCTGNCTATNT  
 GCNCATCTATCTCCTTAAGNTCNACANCNTTNNNGCGNCNCTGATNCTATNTATNTCTCNCNTTANC  
 ATACATNCTNCTCCTNNTCNCCG

TTNAGCCTATAGNGAGTCGTATTACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCNGGCTNGNNG  
 GNNANGGGCATATGCTTGGTCTGGGTGGTGTGGNAAGGACCTTTNAGGGCCGGGGTTGNAAGNTTAN  
 GNCTNNNTTTACNNGGGGNCNANTTAANCNNCNTGGNTTCTTAACCNTCANNCCCTTAAGNTTANNG  
 20 GCNTCCTNNCNACNANNAACATTGNTTCCTNACTNAANGANNNTACGTATGNGGTGAANCCCACTT  
 TNACAAAGCANCAGATATGCTAACTGGACAAGCAAGCCAAGTTATCCCGGGCATATGATGGCACCA  
 CTTACCTGCCANGTNTCTGTGGGCCTGAATAACATANAGGCCANTGANTACGCCAACGCCGNCTTNN  
 GGCTCTGTNTAANGNNCCTCCTCTCNGGAACTACTTCTGGNAGAAGACACTTATANGAACATCAAAC  
 GNCCTCCAGGGGATATCATGTGCTTGTGGCCANCCTTCGGAGAGCTGATGAGAAAACCTCTGGAACC  
 25 CTCTAATTTCAAAGNACATGTTTTCCNCATGAAANGNTGCAGGCTGTTGTCCTCTGCNGCAAGAAGAC  
 TTTTNTATCACGAAACAAGGGGATGGAGNTGATTTNTCTGNCCTGNTTNTGAAAAGCTNTACACTN  
 NANCTCTGGGGGGNGCCCCNAAGNAAAAAAAAAAGACAAATTGTTACCTGGACGTTTTTCANGGG  
 GNGCCATTGAAGGATCTTTCNCTAAAAAAAANNGCCTTCATCCTTGATTTTGGCCANCAAAAAAAA  
 30 AAAAAAANCAACNTCNTGCNTTATTTACCGANTNNCCCCGGNNAACCNANGGGNNGGGGGGNCNCNA  
 NTTAATTTACCNTGGCCNCTTGGNANGTTTCCTTTNCCTCCCCCCTGTTNCNNGGGACGGAAAAANG  
 GANACNGGNTTCATTTTTTTCCCNNGGGGNTTN

TTNAGCCTATAGNGAGTCGTATTACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCNGGCTNGNNG  
 GNNANGGGCATATGCTTGGTCTGGGTGGTGTGGNAAGGACCTTTNAGGGCCGGGGTTGNAAGNTTAN  
 GNCTNNNTTTACNNGGGGNCNANTTAANCNNCNTGGNTTCTTAACCNTCANNCCCTTAAGNTTANNG  
 GCNTCCTNNCNACNANNAACATTGNTTCCTNACTNAANGANNNTACGTATGNGGTGAANCCCACTT  
 TNACAAAGCANCAGATATGCTAACTGGACAAGCAAGCCAAGTTATCCCGGGCATATGATGGCACCA  
 CTTACCTGCCANGTNTCTGTGGGCCTGAATAACATANAGGCCANTGANTACGCCAACGCCGNCTTNN  
 40 GGCTCTGTNTAANGNNCCTCCTCTCNGGAACTACTTCTGGNAGAAGACACTTATANGAACATCAAAC  
 GNCCTCCAGGGGATATCATGTGCTTGTGGCCANCCTTCGGAGAGCTGATGAGAAAACCTCTGGAACC  
 CTCTAATTTCAAAGNACATGTTTTCCNCATGAAANGNTGCAGGCTGTTGTCCTCTGCNGCAAGAAGAC  
 TTTTNTATCACGAAACAAGGGGATGGAGNTGATTTNTCTGNCCTGNTTNTGAAAAGCTNTACACTN  
 NANCTCTGGGGGGNGCCCCNAAGNAAAAAAAAAAGACAAATTGTTACCTGGACGTTTTTCANGGG  
 45 GNGCCATTGAAGGATCTTTCNCTAAAAAAAANNGCCTTCATCCTTGATTTTGGCCANCAAAAAAAA  
 AAAAAAANCAACNTCNTGCNTTATTTACCGANTNNCCCCGGNNAACCNANGGGNNGGGGGGNCNCNA  
 NTTAATTTACCNTGGCCNCTTGGNANGTTTCCTTTNCCTCCCCCCTGTTNCNNGGGACGGAAAAANG  
 GANACNGGNTTCATTTTTTTCCCNNGGGGNTTN

TTNANAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 AATTCCGGCAGAGGCAAAAAGCGATTGCAGTTGTTGATGGGGACCGAGATAAGGCCCAAGATTCTGA  
 CCAGATACTTGACACTTCATCACCCGTTCTGGCTGTTTCTCTGTAGCTAACATCATATCTCAGAC  
 AACCTCACGACAACAGGGACTGGCACATCCAACCTCGAGGAGGTGATGCTGAGGCTGAACACACAGTG  
 55 AGCGAGCACCCAACTTCTAGCAGCGGAGCCCCAGCGCTTCTCATCTCAAGCTAGTGAGGGTCTCCC  
 TCAGCATTGTGCCTTAGGTCAAGTGGAGGATCATCCTTGGCAGCTCANACAACCTTGTTANTTGATAG

AATACCAAAGGATACAATTGNCGGATCCGACTGAACACCACTTAAAAAGGAANCCGAATCCTGANAA  
 CTTGGCCCGNCTNTNGAGTGGGNCCGAAAAAANCTTANTACATNGNAANGCTTGGAATGGCANNCC  
 CAAAATTCCTTGCCCCGGCCCATTAATTTTNAANCCATGNGNTTACCTTTNCAGGNCCCCGGGAATC  
 ATTCGAGGGGCTTGNCAAAAGGAAAAGGGTCTTCCCATNTTCTTNAAGGAAAAGGGGGCNCAAGGA  
 5 NCAGGAAACATTTTTGATGNATTTACAAGGGGNCCCGGNTTTTGGCCGGTTGGACCAACTTGCCAACC  
 CAAGTTGNTTTTCATTANAAGGAATCGCTTGGGCCNTTNAAAAAACCGCCNAAAANCCCAAGTTTTT  
 TANGGGGAATCCAAGNCCCAAGCTTTCCAAANAAAAAAACTTTTCTTNAANAATTTAAATNTTTAA  
 AAANGGCCGAACCTTTTAATNCCANAAAGGGGGGGTNNTTTCANGGGAAAAANCCCNAAAAAATTAA  
 GGGGATTNAAAAAANAATTAATCCAANCCCCCTNCCNNGGGATGNAAATTTTNG

TTGANAAAGCTGGACTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
 TCGGCACGAGGCTTNNNNACNCCNTCGAACTCNANGGNNNCCNNGGNNCCCAATTCGCCTATAGAGG  
 15 ANTCGNNTTACANTCCTGAAGGNNNCCNNAANANCCCTNTNNGAAATTNCATGCNCCNGNNATNNCN  
 CCNTCCTNANCTNCGAATGAANAANNTGGNCTTGATCCTNNCNAAGNTGGCAATNCGNATNCTATN  
 AAGTCCTTNNNACCGTGGAANTNGGCCAAACGTGCNTAAANNCCATTCTTTTGNNTATCCCNCAAGGA  
 TTACTGGTNACCATTTCTGNCGANGAGAACANNCTNTTGGGTTTGNAGACTNCATGNAAGGNCNGN  
 TTTTAGTTNANCTTTGCCTATCCTGAACCTTGCCGAAGACGGACCTGGNTNCCCTGGTTGNCNTTCCNC  
 CTGGGTTTNCNAGCCNNGGCCTTNTCAAAAAAATTACATTTTNCNCTGNGNAGNATTNCCATTGGCA  
 20 TACATTGGNTTATTGCAGNNGGGGAATNTAAANAAAAGCCTTGAAACTTAATGGGGTCAAATGAAAAG  
 TGAAATTTCNANGGNTTGAANGGAAAAAAACCAAATTTNCCATTCCCNAGTTTTGGNNGGAATGGGTT  
 GNACCAAAAAANACCCCTTGGGGGGAAATGGGGGGCCAAAAACAGNNTTNCNTTATTTAAAACCCCC  
 CAAGGGCCGGAANACCTNCCCTANTTNGGANAATATTNGCCCCCTTNTGGANNTTCGGNGGGGN  
 CNTTGAATNAAANAAATTTGGGCNGAAANCTTTGGGCCCCCGGTTTGGCCTTTTNTATTNAAACCCAA  
 25 ANTTNTTTTTTCCAANGTTCCCAAAAAAAAACCTTTNCACCTCCCAAATTNCCCTTTTGGGGNTTAA  
 AANTTTGGCGNGCCCCGTCNANANGGGCNCCANGTTCCCCCGTTTTTTNTTTTCCCNAAATTNTNTGNG  
 GGAAA

TNNANNANAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
 GGNTTGTATGTACAGGGCANTGATGTAACAACAAAAATACCTGAGAAACANAATGTCCATGCTTTCT  
 GCATCTTTAACACTTTGTGTTGTATCACCTCATGGTGGCTTATTTTTCTGTTGTACCATCCAGTCAGA  
 TTTTGAATAAACGAGTTTTGAAAAGACAGTACCTTTTACTATAATTGCCATTAGCAAAGTAGCCCTGGG  
 30 TACTTCATGAGAACCGGTATTAAAAATATTAGTGGGACGGCTCTTTTCTGAAGCTTCGGAAGTANCCAC  
 ATCAGGGACCTAGGATATTTTTCTGAGGTCACTGGACAACCTAGACTATGNATTGGCTGCTATNCCCTG  
 ACCTGTANTACAGAATGATGCCCTGGCTATGTAATGGAATATATTCTAAGGGGGATGGTGTATATTAA  
 GGGACTTTNATTCAAGTACCATANTGGATATTCCAATGTATGGNAAAAACCATCTGGTGGGTTGGG  
 35 GNCANTTTTTTAATTTACAGGTTTGNATTAGAACCATAANATGAAAACCTCTGGGGAAAAAANTTTTGA  
 ATGGGCAGCCCCACCCCAAACTATTTTTTAAATCANTTCATTANAANATTTTCTTCAATAAGGGNCTT  
 TAATTTTTCTTTTGAACCTATAAAATACCGTCAANAAAAAATAAAGTTATCTTNTTTCTAT  
 CAACCTGGTTTTGGACCTAGTTTTAAATATAAAANGGNCCTTANATTTGNAANACCTTTTCTTTTGCCTT  
 40 AACTGGCCTCANTTATAAAAAACAGGGCANTTTCNCGCTGGTTTCANGGGGATCACAAGGGACCTCAAC  
 TGGAANTNAAAANTTTTGGTATCNAANAAATGTCCGNCATNGGCAATGGTNCCNCCCCCAATTAA  
 AAATACCTTTTCCAAGCTTGGGATNCCCCNAAAAAATNTTTTAAACCGGG

TNNNACAAANCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 NAAAATATGTCTTTTNTTTTGNACNTANAANCTGANACTGANNNNNGTTGNNGGANANGANATNAC  
 AGNTGANTTCTGNNTGGAGTTGATGAGCCCAAGGACTGGGCTGTTTGGGCCATATCCTGTTTCATGGGT  
 50 TTTGCCACCACTATAGAACCTTCTGTGGTCTCCCTTGCGAAAGGGGCACAGCTCGTCAGCGTATTTAAG  
 GAGTGACCAGAGTGGAGAGCATGAGGGGAACAAACAGGTGGGGGCTGTTATCCAGAGAACAGTGCTG  
 CTTTCTGCAAGAACTTCTAGGGTAGTATAGAAATGGTGTGGGAGCAAAGACTTTAGAGTGACAGAGAG  
 TCCTAACAGGTCTCTTCACTTCTCTTGGGCTGCAGGGATAATCCTACAGGTCCCTAATCCCTTATTTGA  
 AATCTTTTGGGATGGGTGTGTTTGGGATTGAGGATGATTGAGATTTTAGAAAGGGAATATAGTGCCTT  
 55 TATGATACATAAAGTAATACCCAGTGAGATTGANGGACAGTGCCTACTGTATTCAAATCTATCAATG  
 GTTCTGTAGCTAAATATATGAATATTCCCACTTAAGTGAGATAAATAGATTTTATAAATNNGGATCGG

GACCGGTCAAAACAAAATTTTGGGTCCAAAGTTNTGAACCAACTNTTGGTTTNTTCAAAAAATTTTAA  
 TTTTGGNAATTTTANAAAAANGGGATTATGGGCCTAAAAATTGGNCNCAAGGTTTTTGGGGGAGGAAAT  
 AAATTTGGCCCCAAAAAANCCTTTTNAAAAACNCCCAATGGGNNGGNTTTTTTNCNNATTTTCNANNC  
 CAAAAANAAAAANCCAAAGGGCCCANGG

5

NNNTATCTGGAGCTNCANCGCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
 CGGCACGAGGTANNCTGCCNGNCNNCTACTTGCNTGTNTNGGANGANGGNTNCGGCNNCTGNGCC  
 AACNNAATAACNNTCGCATGGCTNATGACNGGTTCATGATGCCTCAGANCCCCGANGNGCGGGGATNCA  
 CGTGCGATCTTANGCCTTGTGNACGGGACGCCCCGNATNANGATNCNACTTTCGCTCAAAAGANNNG  
 ATATTNTNTGCGCCNNNATCNTTTNCTGCTGCTAGAGAATCCTCAGGNAAANGGGNNGGNCNCNTTC  
 ATANNCNACNNNNGAANANCCNNNTTNCGCNGGNNNNNNGACCNCTTTGNGNTNCCCTNGNATNAAA  
 AGCNTNCGAGNGCAATATAANNCCCNTGTNCGNNAANNTGACNNCCTNGNGNNCNGCNTANNNGNG  
 NGNGNTNAAACNTCNACNGANAGNGNAAANTACCANANGGNGTNGATNCATNCCANNCCGGGANNT  
 GNTGGGCTTTGNACTATTGGTGCCTGAANGCAANCNCNNTCGGNNAGNGNCNAGANNNCAATCTNT  
 NAGGCGNNACTGGANGNACCTTTGACTGNACTCGGCGGACCAGACNTACANNNGAGGTNNTTGGGAG  
 ACGGACCTNTGCNTACTGNTTTCTNGNGATATACNNTTGTGGATGAACGANTANTATNTNACGCCTTN  
 TACCTCTNTNGNATANCCGCCATGGATGNGNGTTCCTTNACCTTCNCCTNCGGTNCNTGGGCTCGAG  
 CGCGGNCCNCTGGGCTTNTTTGCTTTGCTTGANGNGGGNCTCAAATCCCTTNTCGGACATTAAGGGGG  
 GGGNTTANCGGTTCTNTGGGGGAAAAAAAAGGNANTTGCCCCCTTGCTTCAANCGGTTTTTTAAACCT  
 TTTAANANTCCCANGGGAGGAACCCCCCATTTNANNCT

10

15

20

NAANACTGGAGCTCCANCGCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCCGG  
 CCCTGTGCGACCTGCCGCAAGAGCGGTGATCGTGGTGAGACCGGTCTGCTGGTCTGCTGCCA  
 TTGGCCCCGTTGGTGCCCGTGCCCCGCTGGACCCCAAGGCCCCCGTGGTGACAAGGGTGAGACAGGC  
 GAACAGGGCGACAGAGGCATTAAGGGTCACCGTGGCTTCTCTGGTCTCCAGGTCCCCCGGCCCTCC  
 CGGCTCTCTGGTGAGCAAGGTCCCTCCGGAGCCTCTGGTCCCTGCTGGTCCCCGCGGTCCCCCTGGCTC  
 TGCTGGTTCTCCCGCAAGATGGACTCAATGGTCTCCAGGCCCATCGGTCCCCCTGGGCCCTCGAG  
 GTCGCACTGGTGATGCTGGTCTGCTGGTCTCCCGGCCCTCTGGACCCCTGGTCCCCCAGGTCTCTC  
 CCAGCGGCGGCTACGACTTGAGCTTCTGCCCCAGCCACCTCAAGAGAAGGCTCACGATGGTGGCCGCT  
 ACTACCGGGCTGATGATGCCAATGTGGTCCCGTGACCGTGACCTCGAGGTGGACACCACCTCAAGAG  
 CCTGAGCCAGCAGATCGAGAACATTCCGGAGCCCTGAANGCAGCCGCAAGAACCCCGNCCGCACCT  
 GCCGTNAACTCAAGATGTGGCCACTCTGACTGGGANANCGGAGAATACTTGGGATTGACCCCCAACC  
 NANGNTTGNAACTGGATGNCAATTTAAGGGNTTNTGNCAACATGGAAACCGNGGANAACCTGTGTA  
 TAACCCCCCTCAACCCCANNGTNGNCAAAAAAAACTTGGTTTTNTTANCCNNNAAACCCCCAAG  
 GAAAAAAAAGNCCNTTTTGGGTNCNGGNNAAAAACATNAAACCGNGGGANTTNNNTTTNAAATNTTG  
 GGGGNGCAAGGGGGCCCAANNCNTTNCNATNNGGNCNTTCNNANTTATTTTNN

25

30

35

40

GCCCTATNTGGAGNTNNATNNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGTTA  
 AGGGTCAACCGTGGCTTCTCTGGTCTCCAGGGTCCCCCGGCCCTCCCGGCTCTCCTGGTGAGCAAGGTC  
 CTCCGGAGCCTCTGGTCTGCTGGTCCCCGCGGTCCCCCTGGCTCTGCTGGTTCTCCCGCAANATG  
 GACTCAATGGTCTCCCAAGCCCCATNGGTCCCCCTGGGCCCTGAGGNCGCACTGGNGATGCTGGTCT  
 GNTGGTCTNCCGGGCCCTTCTGGACCCCTGGTCCCCANGNCCTNCCANCGGNGGNTACNANTTGAG  
 CTCCTGCCCCANCCACCTNAGANAAGGNTNACGANGGNGGCCGNTACTACCGGGCTGATGANGCC  
 AATGNGGNCCTGANCGTGANCTTGAGGNGGACACCANCCTNAGAACCTGAACCANCAGATNGAGA  
 ACATNCGGANCCCTGAAGGCAGCCGNAAGAACCCCGCCCGCACCTGCCGTGACCTCAAGATATGCCA  
 CTCTGACTGGAANAACGGAGAATACTGGATTGACCCCAACCAAGGCTGNCAACCTGGATGCCATTAA  
 ANGTTTTCTGTAACATGTGAAAACCGGGGAGACACTGTGTNTACCCCAACTTCAGANCCNAGAGTGGG  
 GCCANGAANAANATGNNNTATTNTNCANCNAAACNCCANAGAAAAANANGGCACNTTTTTGTACNG  
 GTGAGANCAANTGAACCGNCGGNAATTTCNAAATTTNTAGTATTGNNGGGAGGGGTNCCCANACCN  
 TGNCGATGTGGGCANACAAGNNGAANTTTNTNGCNCCTTGANGNCCACCNAGGNCCTTCCCAAAAAA  
 TNNCNTACACTGGNAGAAACAAACGNGGCCTANTTGGGCCAACANNANTGNNGAACCCCTTAN

45

50

55

bioRxiv preprint doi: <https://doi.org/10.1101/094860>; this version posted April 11, 2016. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under aCC-BY-NC-ND 4.0 International license.

TTTGAGGCCNATAGNGAGTCGTATTACAGNGGCGGNCGCTCTATAACTAGTGGATCCCCCGGGCTGCA  
 GGCCCCGGCGCTGTTGCAGNTNNGNAGCCCTGCGTCTTATCTNTCCAGNCGGGGTCTTTGCCTCGCCAC  
 CCGCCCNNTTCAACTGGCTGCGCCATGGAGGCNTACCATAAGTCTGATCAGCACAAGCTGNAGGCCNTG  
 ANGGACACAGGCCAANNGCNTGCGTATNANCNNCATCCAAGCCACCACTGGCGGNCAGNATNGNNCC  
 5 ANCCNACGTCATGCTGCAGCGCTGNTGAGATCATGGNTGTCTTNTTACACACCATGCGCTACAAN  
 GNCCTGGATCCTCGGAACCCCTACAACGACCGCTTTGTTCTCTGNAAGGGCCATGCAGGNACCCCATC  
 CTTGTATGCCGTCAGGNGATNGAAAGCNTGNNTTTCCTGCCCGNAGTNANAAGCTGCTGGAATTTTGA  
 GGAAAGATCAGCTTCCNNCTTGGACGGGGCACCCNTGGTNCNTGAAAACANTGCCTTTTACCCGANTG  
 AGGCCANATGGGACTTCNTTGGNCCCANNGNCNTTGAAGCCCCGTTTTCGCGGNATGGCCTNCACCAC  
 10 GGCNATATACTTTNACNANAGCCACGCNACCCGGGTTTANTNGCNTGCCTNGGNATACNTGGCGAA  
 CTGGNCAACANGGACNTNCNNGNTGGNAAGGNCCANGGCCNTTCNNTCAGGCTNTTNNCNTANCTTN  
 GGANAAAAATTTTGTNGGNNATTCTTTGGAANATTCAACCCCCCNTGGGCCAANAATTGAACCCCTNC  
 CCTCNGTTGTTGGNACCCANATTGGNCANTAAACCCACNAAGNGNCCTTTCTAAGGNNCNTTTNNGGNN  
 TNGNNAANC GCCTTGNNCATTNANTNTNAAATNGGGGACNNAANNNGGNAAGGAACNTNTGNCAN  
 15 GNGGGNNTTTTNGNCNAGGTGGNAANGATTGNGNNCCNATNGAGGCCTNTNTTNTGGGNCNAAACNN  
 TTTTNCAGGGGACCCNAGTGTNTTCNNCAATGGGNNNNAATACG

TTTGAGGCCNATAGNGAGTCGTATTACAGNGGCGGNCGCTCTATAACTAGTGGATCCCCCGGGCTGCA  
 20 GGCCCCGGCGCTGTTGCAGNTNNGNAGCCCTGCGTCTTATCTNTCCAGNCGGGGTCTTTGCCTCGCCAC  
 CCGCCCNNTTCAACTGGCTGCGCCATGGAGGCNTACCATAAGTCTGATCAGCACAAGCTGNAGGCCNTG  
 ANGGACACAGGCCAANNGCNTGCGTATNANCNNCATCCAAGCCACCACTGGCGGNCAGNATNGNNCC  
 ANCCNACGTCATGCTGCAGCGCTGNTGAGATCATGGNTGTCTTNTTACACACCATGCGCTACAAN  
 GNCCTGGATCCTCGGAACCCCTACAACGACCGCTTTGTTCTCTGNAAGGGCCATGCAGGNACCCCATC  
 25 CTTGTATGCCGTCAGGNGATNGAAAGCNTGNNTTTCCTGCCCGNAGTNANAAGCTGCTGGAATTTTGA  
 GGAAAGATCAGCTTCCNNCTTGGACGGGGCACCCNTGGTNCNTGAAAACANTGCCTTTTACCCGANTG  
 AGGCCANATGGGACTTCNTTGGNCCCANNGNCNTTGAAGCCCCGTTTTCGCGGNATGGCCTNCACCAC  
 GGCNATATACTTTNACNANAGCCACGCNACCCGGGTTTANTNGCNTGCCTNGGNATACNTGGCGAA  
 CTGGNCAACANGGACNTNCNNGNTGGNAAGGNCCANGGCCNTTCNNTCAGGCTNTTNNCNTANCTTN  
 30 GGANAAAAATTTTGTNGGNNATTCTTTGGAANATTCAACCCCCCNTGGGCCAANAATTGAACCCCTNC  
 CCTCNGTTGTTGGNACCCANATTGGNCANTAAACCCACNAAGNGNCCTTTCTAAGGNNCNTTTNNGGNN  
 TNGNNAANC GCCTTGNNCATTNANTNTNAAATNGGGGACNNAANNNGGNAAGGAACNTNTGNCAN  
 GNGGGNNTTTTNGNCNAGGTGGNAANGATTGNGNNCCNATNGAGGCCTNTNTTNTGGGNCNAAACNN  
 TTTTNCAGGGGACCCNAGTGTNTTCNNCAATGGGNNNNAATACG

TTNANAAANGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 AATTCCGGCACGAGGAGGTGCGCGGAGGCAGAAAGGCGTTCCTGCCCCTGTCTCGTCACTATGTAGCTGA  
 GGGGCAGGAGGCCTGTTCCACGTTCTGGAAGGTTCTTGGGCTCGACCACGGCAGTAGCCCCAGGACTT  
 40 CTAGTCCTTGGCCTCGGATCCTTGC CGGCCGAGGGGAGTCGCCGCCGCCATGTTCCGGCTGCTTGGNGG  
 CGGCCAGGCTGGTGCAAACAGCTGCACAGCAGGTGGCAAAGGATAAATGGTTTTTACTTGGCCTGA  
 TAATNAAAAATATCACCCCTTGTGGTGGTTTTAATGCTGGNACCAGTCCCTTTTCTGAAGGAANGGAAGC  
 TCTGGCTACTTTTCTATCTGATTCAAANGAATGCCNGTATGGCAACTTCTAAGNATTGGCCACNATNG  
 GNAAACCAAGTGGCCNTNTTNAAAATTCAGGTNTTAATTTNGGNAAGGAACCCACCNCCTTNGNACC  
 45 CTTNATAATTGGCCNACTTCNNTTNGTGCTTNAATNGGAATTCAANNNGNAATGGTNGCAAGGTTTGG  
 TNAACAAANCTCTGGGGGGAAAGNTGGTGGGGCCCCNAGTGGACCCANTTACTTAATTTAAACAAAAA  
 AAGCCNNGNCCACCTTTTAAANAAATTTTGCTTTAATAANTTGGTNGGCCTTCAAGGNCCCANANTNAA  
 CCCCAGTNCCTTTTGNAAATGGTTNNTTCCCNCAAAANNNGGGGNTNTNNAAAAANGGGGNNNGA  
 AAAACNTTTTAAAAAANNNNANNTTNNCANNNAACCCCTTTTNTTTTGGNAAAACATAATTTTNN  
 50 NAAAAAATAATTTTAAAGGGGNTNTNNAAAATTTNGNNNTGTTTTNNAAAAAAATNNCTT  
 TGGGNAAAACCCCTTTAAANNNCNNAN

TTNNANAAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
 ATTCGGCACGAGGGTCTGTCCCTCTTGAATCTCCCTCCCACTTCCCTTGCTACATTCTGTTTCTATG

5

20

40

50







5

10

30

45

CCNGGGGGGGGGGAANTTTTTTTTTTGNNGGTNCCCACCCCATTTTTGGCCAAAANANAANTTTTTTTTA  
ANAAAACTNTTTTTTTAAAAAAAANCCCCANTTTNCCCCAAAANGGGGGGGCCNCCCCCAACGNNG  
TTGGGGGGGGGGGTTTTTTTNAANNAACNTTTTTTTTTGGGGGGNN

5

NAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGATA  
AGAACTTGACCTGTGATTNTTCTCTCCCTNCCCTCCCNCTGCANGTGTGGGTCTTAGGAAAGGACCTGG  
NNCACCTTGGGTNGAACTCAAAAACTTTCCGANGCNCACCATNAGCNGNCCCAGCTGAACACT  
CNCCCGTGTAATTTTAAACATCTAGCANTANATAATTGNNGTGGTGACATAAAGGACCTGNTTCTGT  
10 AGAGAGAAAAGCTTANCATAATTGTTGTGAAATGTAACATGANGCAACTAACTNGNANTTTTTTTGT  
TNTTAAACATGTNNGNTTTTTAAAAATAGANTGATANAACCTTGCCAGNCTTTAAAAANCTTGGCTTAA  
TTNANTATATTAATCTGTCCGTGCANAANTAACCANCCCTTTAAAAATGTTAGGGGAATNAATTNGA  
AGCTGGCGAATAGNAACTGATTTTAAAGTTTGGTATTATGAAACATTNAAGGGCTTTTGTCCCTAATTG  
ATAATCATGTTTAANANGTAGTCATNTGCGGGTATAAGCTAGTGTTGCTTGCTTGCTGCANTATTATTGCC  
15 CCCTANANGAAAGNGAAAATGGATTGGNATGGAACCCCCCAANTTAAAGTAAAAGAATGGNTGAAGT  
TTTTTTTANAAATTTNCCCTTTCCAAANTGGAACCNCCCTTTTAACTGGGCGGGTTAACAATAACCA  
AAAANAANGNTGGNTTTTNTTGGCCCTTGGGAAAAAAATTTAATTTCCCCCCCCAGGTTTTNNNNNC  
NGGGGGGAAAAAGGGGGCCTTAAATNGGNAACCTAAGGGGTTTCATGGCCNTCCNTTTAAANAANCCC  
NGGGAACCGNNTNGGCCCTTCCAAACNTTTTTTNNNCCANGNGGGGTTTTTANGGGGGGCTTTCCCC  
20 CCGGGNGNGAACTCCCCAAAAAG

TTGANAANNCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGAA

25

TTCCGGCAGGAGGCTACACCAGAGGCGGCCGAATCATCTCCACCTCTTCACGCTCCGTGATGCTACATT  
ACCGCTCAAGCCTGCTCCAGATGCTCGACACGCTGGTCTTCTCGAGCCTCCTGCTGTTGGCTTTGCGG  
AGCAGAAAGCAGCTCTTGGAGGTGGAGCTATACCCAGAATACAGAGAGAACTCGTACGTGCCGACCAC  
CGGAGCCATTATCGAGATCCACAGCAAGCGCATCCAGATGTACGGAGCCTACCTCCGCATCCACGCCC  
ACTTCACTGGGCTCAGGTACCTGCTGTACAACCTCCCGATGACCTGCGCCTTCGTTGGTGTGCGCCAGCA  
ACTTCACCTTCTCAGCGTCAATTGTGCTCTTACGCTACATGCAGTGGGTGTGGGGGGGCATCTGGCCCC  
30 AACAGCGCCTCTCTTTGCAGGTAAACATCCGAAACCGAAAAAGTTCCCGCAAGGACATCCAAGCGAA  
AGGTCTCTGCCCATCAGCCAGGGCCCCAAGGCCAGGAGGAGTCCCCCAGCTTGTCACTGTTACAGA  
GGACGGTGAGAGCCACGCGGATCCCTCTGGGACAGAAGGNCAGCTGTCCGAGGAGGAAAAAACAG  
AACAAACNGCCCCTGAATNGGCNAAGGANGAACTTGGAAACCCGAAGGNCCAGTGATNGGGTTCAA  
GGCTTCTTGGGGAAAAATGCAACTTTTGGTTGAACGGGANGGCCAAACCTGGGCTTGGCCTTTTGG  
35 GCNTTTTGGCCCCCTGGCCCCCAAAAAANAACCCGNGGGGCGNAGNTTTCGGNACCCCCCTTGGNGGGGGCT  
TTTGGTCCNGAAAAGGGGGCCCCNATTTTGGGTTCCANTTTCTTNAACCAAATAAGGGCCCCAANTT  
CCCCNTT

40

GNCCTANTAGTGGNGTCGGTATTAACNGGGGGGCATNCCNNAATTTATCAANTTNTTTGTNTTNNCNCAA  
TCCNAGNNTCCNAACTTCGGCNCCTCTNANGCNNNTTCCCTACCCCCNTTCNCCNACANTNTCCTACNT  
TCGTCNTAAATGGNGTCTCTTNTNGNCCGNTACTCNNCATNCTCTCNTTNCNCTTNCCTCTCTTCTNT  
TCGTTTACGGTCCNATCNCNCTGGGNGTNGNNTATGAGNGNNNTCANATTACTCTCTCNCNCGGA  
GNNCCTCTACTTNCNNNAGNNNNNCCTGCCCTCGATNNGTCTGTNNANTATNNCNCNNNNNNNCCTA  
45 NTGACCCAGNGNNTNGCTGTCCNNTATCTNNNNANNANCNTNNTCANGNAGGGGNNNNNTNTTN  
GANCNGGAATTCCNNAGNNATNGATATNGNNTAGGNGNGCTTNGNACTCGNANGTAGTNGTNGCNCN  
TNTGGNTNTAGAATNANAANNCCNNNGGNATACNTNTGNNCTGATTTNNTGTCNGTCCNGCNGNTNAN  
CNCNTNTNNNGGTNCATATNTNTTNTNCCGGTGTNNGANGTNTNCNATTANTANTCCNGNGNAGN  
NTTNNNTANACNNANGNATAATTNNGNNNCGGGNTNACCANTNTNNNNCTNGNATCCTAGNAGGAA  
50 GGCTGNCGAANCNTTNNNGNGGNCCTGGNNGANNNTCNNNGGNGGNCNGNNNNNGNTNNNGCNCNNG  
TGTNCGNNNANTAANANTATNTNANNATCNNNTNGTNGCTGGGNNATANTTANCGACNTGTCNNT  
ANCGCNANNNCCGNAANNNGNGCTNTTNTAATTNNTATNCAGNGCNCATCATGGNGNNATCAAAGAN  
TCTNNCNTGNNAACAGCANNCAGGGCGNGTNAAGGCANTTGCNNTNAGTCCNNGTNCNNAGNTNG  
CNTGAAGNCAATTTGNNNTTNNCNCNGGCCANAATTGNCCCCATNTGNNNCTNTAGNCNNCTGN  
55 NGCANCNNNGTNGCNGNAGACCTNCGTNNNGNCCACAANTGTNNGGGTCTNNTAGCAGTGNCNNA  
GCGCGCGGTACTGTATCGCGCNCANACGCGNCCCANGGACCNNCNGTGTGCANTNACNANNTCTCN

NATNACTANNNAGNCGANANNGTANANAATGCGNNNANAGNNNACGAGATGTNCGCATNTNGAGNN  
 AGAGAACAGGGGTGNTCTGTNNGCGCGCGCGNGNGCNCACGCAGATCGTNATAGATATACATATANANN  
 NTCTTANCGGGCGCGATNANCGCGNNNCNCGACGNGCGCNCNCGGCTNNCGCTGGANTGTCNNCNANN  
 TAGNTNGTCTCGNTTNCGTGTNNGACGNNGANGNANGGANTCATGNGNNTNTNGTTTCGTCGNC

5

TTTGAGCANCATCTGGAGCTGCACCNCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
 GGCACCTCGCTCGCAGTTCGCTCCGCGCCCTCTGCAACCATGTCTGACAAACCCGATATGGCTGAGATT  
 GAGAAGTTCGATAAAGTCGAAATTGAAGAAAACGGAANCAGAGAGANANNNCNNNGTCTTCNNAN  
 ANNGACTGANCNAGNNACACTNTGTACNNTAGANNTAANGGANANTNCANTGTCNNAANCCANCT  
 TGCTTTCNNCANNCCNGAGNNGNNTNTTTNNNNNTNTCTNTCNCNTTTNCTNAAANNCAAGANGCCNTC  
 TTGCACGNGTGTINNCTINGTNANNTTNGAGTNGCCNTNCCNNTNNTNTTGNCTTTATNNNTNTTCCNT  
 TTGTTTANCNNGANAANNNCCNTCNTATNCTNANTNCACNCNTTNCNCNTTAGANNNNAGTNNGGNNT  
 CNAGATCAGCTTNNATANCNGANTCNNTGTANNNNNNNTTCTTNNNTGAGTNATCNTTNTNGTNNA  
 TTTNANNGANTGTTTGTGANCAGNATNTTANACNNCGTTTACTCNNCGCNGGAGNTTCNAGNTNNN  
 NGNGCTCTTNTNTTNGACACANNTNANNNNCATGNCCTTGCGTGTATCTCNCGATNTTNCNTANA  
 NTANNTNNAATGCATNNNGNCTGTTANNNCNANGCANTNGTCTNTATCNNNAGNNANNTNGNTCNA  
 NGANTNCNNNANGTATTTATGGTNCNCNCTGNNTCTTACNNTGACCNANTNGNNATTNNANNTCTGN  
 NNNTCGCNNNTTTTNTNGATTNCGGAGCACANTCTNCNGTNCNTNNNATNCAGTTTNNNAATNTCTG  
 TNTNNGCTNNTCGAGTCNANGTTGNTTTNTCCNCNNTGTNCTCANCTTTGGANTNGTCNTATAATAAC  
 CTNNNTGTCNTNNNAGGATNTANNCTANNTTCTCNGTACTTNTCNTCTCNTTNTCCCCTAANTTTT  
 NTANNCCTTTTCNNTGTNNNCNATNNTTCGNTCTNGGNGANGANNACTATCATANGTNAGCTTTCN  
 CTATATNCNTCTACGTCG

10

15

20

25

30

35

40

45

50

NTATANTCTAGANGACNTNNACNANCNNNCNACTATNNTNCAANNCTCTCCNCACTNNTTTTNGAAGN  
 TACCCATTAACGAAGNTTCANCCNCTACAGANGGNCATTTCTTNTNCCNTCNTCNCCTCATCACAGATNT  
 GCANNCNTACACTCCACNNNNTTNCTNNTNCCNNANAAACCNNTNNNNCNNTTNTTNAACNTATTACTA  
 NCACNATTNCTACANATCANACGNTACCCGNGNNNNCTNCTACTTTCNCNNCTAATANTTTANAANAC  
 ACTANCAATCAANTTATACTCCNTTTAANTTCANTATANTTNTNANNNNCTCNNTCCCACACTACTTC  
 TACNCNTCTTNCNANTNTTTAANNATTNCTTATTATATNANNCCCNAGTNTNCNACNTTANNNNTATAT  
 ATNTTTCTAAANNNTANTNNGCCGNNANACCNCAACCAACCTTNTTTTCTCNAATNGTCCTGCGCN  
 GNCNTNNNNCAANTTATANATNANACATNNNNANNNNNCANNCACGNNCTTACNNCTTTANTGNATA  
 TCTNNNTTANCCCCNTANAGACTCANCNTATCANNCAATATTANATATCTANAAATATCNNCATCNA  
 NTCATNTACCTTNNATCANATCACTNTCNNNTTNTAATNTNNNTAATCTGNTNNTNANTNNTTNTNNTN  
 TANACTAATANAANCNNNCCACGACCNGCCAANTCNNTCTNTTNTNCCNCTACNNANNAGCTACTAN  
 CGNCTNCCNTCANGTNANCTTNTTCTACNAATCANNTCNATNAANNCCACCCCTANCCNCTNCCNAN  
 NCTTCNCTCACCTTATNGCTATTTCGNCNTNCCCNCCCTTNTNTNTTCTCACCTGTANCNTAGANGNNNA  
 NNCGNNNCCCTNACNTCTATANCCNTNNGTCTTTTANNNANACTANNNNGTATCNNCAANNNTATNA  
 NGTCTCTNTNGTCNTTCCCTCCGNCACATATCANACNNNNANATNCNNCCNCTTCNANCNATTCC  
 AACTNTTTATTCTACATTATATTTANACCNNNNNTTCTCNCCTGTTACCTTNCACCNTCTNNTNCCNTA  
 CTNCCNACCNATATGNCACCGNCTCAANCATCTANNTACTTANCATCTACAATNATNTNTANGAT  
 CGNCNNNTACNCNATNTATNCANNATACTTTCNCTGANTNNGCNNATNNNTTTCNTATTATTTANN  
 TCTNCTCTNAANTTANCCNTACAGNACNNCGAANNNTNNCATNTANTATCTTTCNNACANGTATTCAN  
 TCAGNACNATNTCTGGCTTTACATCANAAATCTATCAANATNNAATGCGCTNNNTTANNTANTCANNN  
 TCTTNTGCACTCATNNNTCTNTNTGACTANNNGCNNNATNTNTCNCNTNTCTNTGAACNTACAAAT  
 ATATAAATNTGNATCCTCNCNAGTNTATCNCNTTATNNANCNTATACACGCCTNCGANNCCANNANTN  
 TCCATCTCANCTCATNTANATCTCTANAANAACNCAAAAATNTTTACATNTATNNNATANNTATNNAA  
 TANACATACGNTACATTATTNCNGCNATNNTATCNCNTNACACTACNANCATNCTAATCCTCTACGAC  
 GNCNTNACACCATACATNNGATATACNACAANATATATNACNAATCNNNAAACNATCNGCG

TTNAGCCTATNGGGAGNNGNATNACAGTGGCGGCCGCTCTAGAACTAGTGGGATCCCCCNGGCNNGN  
 NGGTTTTTTTTTTTTTTTTTTTCAAANNAAANCCNNTTTTTTTTNAANNNNNGGNNGGNAAAAANCCGGA  
 NNCCNNNNCCNNGTTTNNGGNCCNNNTTTAANNCCNAGGAAACNTTNTTTCNAAANNGNANNGG  
 GNAATNCCNAAANNAANNCNNGTTTTTTTTTAAAANGNNNAANNACCNGAAANCCTTTAAANNAAAA

55

NNNNTTTNCTNAATTNAAAAAGNCCTTAATTTAAAAAAANNGGGGGCCNTTNNAANNAAAAANGGN  
 NNTCCCAAANNNTTTTNAACNGNNNNCCNCCAAAAAAATTCGGGGGGGGGNNNCNTNGGG  
 ATTNGGCCCNCCNNNNNNNGGNNAANGGGGNNANNCNAACCCCGGGNNTTGNNTTTTTTTCNAA  
 TNCCNAAANGGGAAANCCCTTTTNGGGAAGNNCAAAGGGGGGNCCCCCCCCCTCCNAAANGTNCNG  
 5 NAAGGGCCCCCTTTNTTTTAAAAGGGTTAAAAACCCATTTTNGTTTCCGNCCCNTGGGGCCAATGTGNG  
 GGGGAAAAANCCNAAANAANNNNNNTTTGGGGGCCNNNCCCCGGGGAAAAAAACCCCTCCGAT  
 ATTTGGGGAAAAANNGGGGGGCTTAAAGGGGCCACCGGGTTTTTNGGGGTTTNNCGGGGNGGCCCC  
 CCCCCCTTTTTTCTCTGGGGGGAAAAAAAGGNNAANCCNAGNCCCNTTTTTTNNAATNN  
 NNCCCNNTTANTTTTTNTTTTTTCCCCCCCCGGGGGGAAAAANNTTTTCNCTGGGGTTGGGGGGCC  
 10 CCCNTTTTNGGGGGGGGAAAAAANAAGGGNGCCCCCCCCCTTTTAAAGGGGNCCCCCNCCNTNTT  
 TTTTTTTTTTTTANAAGNGGGGGGGGNTC

TTNAGCCTATNGGGAGNNGNATNACAGTGGCGGCCGCTCTAGAACTAGTGGGATCCCCCNGGCNNGN  
 15 NGGTTTTTTTTTTTTTTTTTTTCAAANNAANCCNNTTTTTTNAANNNNGGNNGGNAAAAANCCGGA  
 NNCCNNNNCCNNGTTTNGGNCCNNNTTTAANNCCNAGGAAACNTTNTTTCNAAANGNANNGG  
 GNAATNCCNAAANNAANNCNNGTTTTTTTTAAAANGNNNAANNAACCCNGAAANCCCTTAAANNAAAA  
 NNNNTTTNCTNAATTNAAAAAGNCCTTAATTTAAAAAAANNGGGGGCCNTTNNAANNAAAAANGGN  
 NNTCCCAAANNNTTTTNAACNGNNNNCCNCCAAAAAAATTCGGGGGGGGGNNNCNTNGGG  
 20 ATTNGGCCCNCCNNNNNNNGGNNAANGGGGNNANNCNAACCCCGGGNNTTGNNTTTTTTTCNAA  
 TNCCNAAANGGGAAANCCCTTTTNGGGAAGNNCAAAGGGGGGNCCCCCCCCCTCCNAAANGTNCNG  
 NAAGGGCCCCCTTTNTTTTAAAAGGGTTAAAAACCCATTTTNGTTTCCGNCCCNTGGGGCCAATGTGNG  
 GGGGAAAAANCCNAAANAANNNNNNTTTGGGGGCCNNNCCCCGGGGAAAAAAACCCCTCCGAT  
 ATTTGGGGAAAAANNGGGGGGCTTAAAGGGGCCACCGGGTTTTTNGGGGTTTNNCGGGGNGGCCCC  
 25 CCCCCCTTTTTTCTCTGGGGGGAAAAAAAGGNNAANCCNAGNCCCNTTTTTTNNAATNN  
 NNCCCNNTTANTTTTTNTTTTTTCCCCCCCCGGGGGGAAAAANNTTTTCNCTGGGGTTGGGGGGCC  
 CCNTTTTNGGGGGGGGAAAAAANAAGGGNGCCCCCCCCCTTTTAAAGGGGNCCCCCNCCNTNTT  
 TTTTTTTTTTTTANAAGNGGGGGGGGNTC

TTGAAAAATCTGGAGCTCCACCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 NNNTCGCGNCNAGAGCTNACATGGACCCAAANCCTCNGNCNGNCTTGGNGCGCCAGNAGCTACNNNT  
 NNGGGAGCGGNACAAATTNTTNNANGACATTTTACANNNTGANACGGANTNTGTTTTNCCCCTGANCA  
 35 ACNTGNATCNNGANTNGTACANANCCCGCATNGNTANTATCTNATANNTGAATGTGAATGTCAACGC  
 ANTNNNCAAGTGNANCTAATCGNANTGCTGGATCAATATAGAANGGATGTGATTNTGTCTTGGGAA  
 CANTACANCNNNTNTNAAGANGGTTGGCCGNNANCAANCCNTNNTTAGGTTNNGACCTNTNNCAG  
 TTNTAANGCCAAAANACAAATATTNTTGGGTCNTTNGTNTTTTGGGNNAACCCNCCCCCCCCCNAAA  
 NCCNAAAANNNNNNGCGTTTTTGNNGNNGNCCNTGGTGANTTTANNTTCNNNGTTTTTGNAGGNCTTNT  
 TGNTTAGGAATGAANANATGGGNNTCCCTTNNNNNTTTTGGCCATNANCCCTCTAACCTTTTCC  
 40 TCCCCNCTCCCCCCCCCTTTTTNCCCCCCTTTTTTTTTTTTTTCCCCCCCCCTCCTCCNCCCC  
 CTNAAGGGGGNGTTANTAANNTTTTTTGGCCNATTAACNNCCNATTGGNTNNCTGGNGNAGGGNC  
 CCAATGTTANGGNNTATCTTTTAAAGGGGNANGCTTNGNNNANNANTGTAAATATAAAAGNTTGNAC  
 CNTCNNTTTNTTAACAAATTTTTTGTCTTATATTTTTTNNCCCCCCCCCCCCCCCCCNNTTATTTTT  
 NAAATTANATTANTATCATTATCTNNNTTNTNNGGNNGGANCTAGATNATNCAATCCNNTTNCCTTTA  
 45 AATGGNGGGGNANANNANAANCANNTANTCCTCTTNTGGTTTNTCCTTTCATTTTANCTANTT  
 GNCTNNCAATNTTTTNCANTNTATTGTACCANCNT

TTNAAAAAAGTGGACTCCCCCGGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
 50 TCGGNACGAGGCCGNTTCGGATCGNGAGTNCNGCCGNAGCGNGCACCGCGGNCCGNANCTATGGC  
 GGNGTNGTCCGANTAGTTTATTGNGGCGCTTGAGGCTACAAGNCCAATTATNTTCAGCTNAAGAANA  
 AGTTAGAANATGAGTTCCTANCCGNTTGGACNTCTGCNGAGAGGGGACTNCCCAGGNACCGGCTTC  
 TTTGAAGTGTNCGTANCGGNAAGCTGNTTCACTCCAAGGAGGGAGGCGATGNNTACNGGGNCACGG  
 AAAGCAGGTTNCTGAGCTGGTCCCGCNCATCAANNCCGTTTTGACTCAGGCTNGATNTGCGCTAAAGG  
 55 NATAAACAGTAATNGTGCCCAACCCCTNTNGGNAGACNTTATTGACANGAAGGACTGAANTGTCT  
 TTTGGACNCNTGGTCCCTCCCTGATGTTTTGCCGGCCNCCGTTNGGAACAAANATGGACACCCCTGNN





5 TGTGCCCCGATGAGGACCCAGCTGCGGTGACCCCTCTGCCCCCTTCTACCTCGCCATCAGCTCCCTAC  
 CCAGCTTATCAGCTGGGTCTCACCTGCCACCCTCTTGCCCTGGCCAGTGGGAAGTGCAGGGAGATGGGA  
 GGAGGACCTAGCACACAAGTAGGCCCTCAATAAAAGCTGGCTGGTGTGCACTTTAAAAA  
 AAAAAANTAANGGGGGGGCCCGNCCCCANTTNCNCNTNAAGGGGNGTNCGAATAACATTTGNTNN  
 10 TTTTNTNNNNNTNNNTTCGTNNNNNACCNATNCNNTCNNNNNTTCNNTCCNNTNNNTNGNNTCTACTT  
 CTCTNTATNTCTGTNNNTNTNTTNCNNTTTTNCNTTNCNCCNATTNNNTGNTTNTTNTNTTTNNNGN  
 GNTCTNNGNTNTTATNNGNNTTGTCTNNAACNTTNCNTNNCNNTAGNGGANCCCTTGNCCNNNGGN  
 NTNTAATTCANNTATTNCTNTNNCNNNNANTCNTCTTNNNNNNNCTTCNCNNATTNTNTTTTNNC  
 NNTCANTNTTNNNCNCTTNTTNCNCTTNNCTNNNTNTCTCNNNTTTTNNNGNGNNGNCGNTCATTCNA  
 CNNNNNNNTTCNACGTGTCGNGGGTGCCC

15 GCCTATNNGGAGCTNCATCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCANN  
 TGTNNAGGGGGCACAGCAAGAGCCGCCCCAGGAACCACAGACCCAGTAGAGACCTGGCTGTCCCCT  
 TGGGCATGGCCTCTCTGCCCTCTGGACCTGTCTTCCATCAGGAGAAACCACTGAGATGGGTCCCCTTCC  
 CCCAATGCCACATACCACAAGGACAGGGCTCATAGGCCCTCTTCCCTTGCCAATCTGATTACAGGGCCTC  
 GGGTGGAGTGAGGAAGGGAGGCCCCACCCCCCAGCCTTCAGCGTCAAGCTGGGCAGACCCAGGAGG  
 20 TGTGCCCCGATGAGGACCCAGCTGCGGTGACCCCTCTGCCCCCTTCTACCTCGCCATCAGCTCCCTAC  
 CCAGCTTATCAGCTGGGTCTCACCTGCCACCCTCTTGCCCTGGCCAGTGGGAAGTGCAGGGAGATGGGA  
 GGAGGACCTAGCACACAAGTAGGCCCTCAATAAAAGCTGGCTGGTGTGCACTTTAAAAA  
 AAAAAANTAANGGGGGGGCCCGNCCCCANTTNCNCNTNAAGGGGNGTNCGAATAACATTTGNTNN  
 TTTTNTNNNNNTNNNTTCGTNNNNNACCNATNCNNTCNNNNNTTCNNTCCNNTNNNTNGNNTCTACTT  
 25 CTCTNTATNTCTGTNNNTNTNTTNCNNTTTTNCNTTNCNCCNATTNNNTGNTTNTTNTNTTTNNNGN  
 GNTCTNNGNTNTTATNNGNNTTGTCTNNAACNTTNCNTNNCNNTAGNGGANCCCTTGNCCNNNGGN  
 NTNTAATTCANNTATTNCTNTNNCNNNNANTCNTCTTNNNNNNNCTTCNCNNATTNTNTTTTNNC  
 NNTCANTNTTNNNCNCTTNTTNCNCTTNNCTNNNTNTCTCNNNTTTTNNNGNGNNGNCGNTCATTCNA  
 CNNNNNNNTTCNACGTGTCGNGGGTGCCC

30 TTGANAANATCTGGAGCTCCACCGCGNGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 AATTCGGCACGAGGGTNACGTTGGTGCTCCCGNACCCAAAGGTGCTCGNGGCAGNNCTNGTCCCCCTG  
 GNGCTACTGGTTTCCCAGGTGCTGCTGGCCGAGTCGGTCCCCCGGCCCTCTGGAAATGCTGGACCC  
 CCTGGCCCTCCTGGCCCTGCTGGCAAAGAAGGCAGCAAANGCCCCCGCGNNGAGACTGGCCCCGCTG  
 35 GCGGTNCCGGTGAAGTCGANCCCCCTGNTCCCCCTGGCCCCGCTGNTGAGAAAGGAGCCCATGNNGCT  
 GACGGACCTTGCTTGAANTTCTTGGCACTCCTGGACCTCAAGGTTTTGCTGAACAGCGTGGNGTGGNC  
 GNCCTTTCTTGGTNAAAAAGGAAAAAGAGGCTTCCCTTGGTCNTTCTGGGCCCTTTGGTGAAACCC  
 GCCAAACNANGTNCCTTTTTGAACCAGNNGGAGAAACGTNGCCCCCTTGGTNCCAATGGGCCCCCCT  
 TGGATTGGCTTGAACCCCCCTTGGATAANNCTTGGACCGTTAAGGGAACTTCTTGGTGNTTTAAAN  
 40 GAATTNCCCTTGGAAAAAATGGTTNTTTTTTNNCCCCCAANGGGNANCCNNNGGGNGAAAAACC  
 GNTCCTTTGTTGNAACCNCTTTGNCCTTTTTGNNCGCTTNCNCGGGGGGGCCCCNGGGCCNTTNTTG  
 GNACTTNTCNGGCNCCNCCCCCCCCCCCCCCCCCCCCNGAAACCGGGCCTGNTTGGTNCCTTNTTTNG  
 ANCCANTTGGGCCCCGTTNGGTTNNCCCCNGGNCCCCCCTTNGAAANCCCAAGGCCCCCTNNGGN  
 NANAAAGGGTTNNNAANAANGCAAANAANGGCCTAACNAAGGCNTTTNNGGGNTCNCNCGGGANT  
 45 TTTTNGGNTTTTAAGGGTCCCCCGGCCTTTNCGGGTTTTTTTGGGCNCCCCCCCCCCCCCCCCCCCC  
 CCTTT

50 ANAAAACTGGACTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGNNNGG  
 TCTGGGNGNCNNGTGCTCCAAGGAAGTAGCCACTGCCATCCGNGGGGCCATCATCTGGCTAAGNTGT  
 CCATCGTCCCTGTGCGAAGAGGCTACTGGGGGAACAAGATCGGTNAGCCCNACANNNTCTTNNNA  
 NGGGACTGGCCGATGGANATCNTTNTGNTGCGCCTCATCCCTGCCCCCAGAGGCACTGGCATCGTCT  
 CCGNCCCTGTGCCCAAAAAANTGNTNNTGATGNNCGGATTNGNCGACTGNTNCNCTTCTGCCAGGNGC  
 TGNACTGCNCCCTGNGNAANTTCANCNANGCCACTTTTGATGCCNTTTNCAAGACCTATNGNTACCT  
 55 NACCCCTNACCTNTGNAAGAGACGGTNTTACCAAGNCTCCATATCANGAATTCAGTACCATCTTG  
 NGAAGACCCACACCAGAGTCTCCGTGCAGAGGACACAAGCCCCAGNTGTAACCNCCANATAATTTTAT  
 AAAGGGAATAATAANGTGANTGAAACCNTGTGNNNGNAGTGNNGNNTNNANGTTGGGGGGGGGGCC



NGCCCATTTTGACNCTNAGGGGGGCTTNAAAAAANNNNNNGCNNANAGGAACTGTNGCCACGGGTGCG  
 GGGTGNGNCNTGAACCCCTGNCANCATNCCCTTNGAGGTGGNANCNCANCNCATNGGNAANCCTTTT  
 ATTNTTNNCAAAAAACCCCTTCTNGCCNGAAANNGGGTTTTAATTNNTNCCCNCCGGACANGCCNTTT  
 NCGGGGAACCAAAAATTCNNGAAAAAGNAAANNNNGGNNTNGGNNTNAANAAANNTTNTTTTTTTT  
 5 TNCAAAAAAAAAAAAAAAAAAANTNNGGGGGGGGNCN  
  
 NNACAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
 CGGCACGAGGATGGCTTTAGGGATGGAGATGCTGCTTGAGGAGCCCGCAGATAAGTTTTTCTATTAAA  
 10 AAAGATAGGCGTTAGTGTATTTCTTTAGGGATTATAAGTAGTGAAAATACGGAGATACTGCTTTCAT  
 TAAGTCTTAGATAAAATTTTAGGGAATAATGAAGACTTAAAGAGTAGTTGGAGAAAGGAAGAGGGA  
 AGAAAAAAGATAATTTTAGAACCTGAGGGAGGTAAAGAGCTGAAATTTTTTCATGGAGTGAAAAATTT  
 AAAAGAATTGATGAGCTAGGACTGCAATGTCTGGATTTTTTTTTTAAAGCCTTAACCTGAAGGGCAAC  
 CTTTTACCTTAACATTAACCGTTGGGTACGTAAATCGAACCTAANCCTTTTAAAGGTTGAGTTGTA  
 15 GGTGATTAATACTACAAAGGCCATCTTAANATTTACCTGAAGGNGGTTTCAGAAATAATGCCTTCA  
 NATTCNCGGCGCAGTAAAAATGGCGTCATTTTGAAGCCTGCTTGATACTAAGGCTTTGTTTGGCTAAA  
 GTTGACCGGAAATATTAGGAATGGGAGGGAAAGAAAATTGGAAAGTTTGAAGTGGGAAAATTCGGA  
 AAAACAGAAGTNCCGGGAAGGNGGAANAAAAAACCTTGGAGAAGAATTNGGAGGTTCCCCGTTTTAA  
 AAAAAAAAAACCTGGGCTTACGGGAACCCGNCNCCAAAAANAACCTTCGNAAAAAAAATTTGGGCN  
 20 AAATTTCCCCAGNGGGCCTTCAANANCTCANGGGGTTTCCCAAGNCNGGGCCCCAANAAAAAATNGG  
 CNGGGTTNTTTTTTCNN  
 NNNNNNNNNNNANNNCNCNCCCN  
  
 TNNANCAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GAATTCGGCAGGAGGAGAGGGTTAATTTCTCTGAGTTTGGATAGTTTTGAGCCCTTGACTTTAATTT  
 CATTGCCACCACTCAAATCTCTTAGCACATGCTTAGGATTAAGGATCCAAAAATGCTATCTAGAGAG  
 TTGCTAGTGGTGTGAACAATGCAAGTTTTTATTTAAAGAGCTCTGCACTGCCATTTATGAAAGCCTC  
 TTTATGATGTTTGTGTTGTGTCATTTTGTCTTTACACCAAGAAATTGTATGTACAAATATGCAGAGA  
 30 ACATATATTGCCTCTGCTTTTATCAGGGCGCTCACCCCTGGTACTTCGTATATAAAATGTATTAACCT  
 GGGATTTGTACCAGTTGCTGTATTTGTATATAGAATTTTTATAAATTGTATGCTTCAGAAATAATTTA  
 TTTTTAAAAATAAATTAAAAAATTTAAATCCACATCCATGGTACACCTTTCTTGCTGAAATGTAAAG  
 AATCCATTTGTCACCAGGGATCCAGAACCCCATCAATTGTGAAGTTTGTCTATCTAGAACAGTTTAA  
 AATGTCAGTGTATTTTATAGATTTGAAGTTAACATTCTTATTTTCAAGANAATTTATGAACATTGTAGA  
 35 AATGTATAAATGCATTTNCCAACCTGGCTTAAACATTGGANTTTTATAGACTTAAAAAAAATNCTATG  
 TTTAAGTNN  
 AGGGGGGGNNNTAANNN  
 NNNNN  
  
 AAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTCGG  
 CACGAGGGAGNTTTTTTTTTTTTTTTTTNNNCCNCTTNAATTTTNTTTNGNTTTTTTNAANGNNGCCN  
 NNNCCCAANTTTNTTTCNTTNGCNTNNTTTNTTNAATTTATTNTTTCNNNNNCGNNNNNTTTNTINGAT  
 45 CTNCTAAAAANAAANNGGGNACCTTNGGGNCCNTTTTTTTTTTAANNNAANNNAANGGNCNCNTAA  
 CCNTNTNAAATTNGGAANNTTAAACCCNCCCAAAGGNAAGGGGGTTNCCNAAAAANCCCTTNGGGN  
 AAANNAAGGGTGNTTTTNTAANCCNCCCNANGGGGNGNACNNANNATNGATGCCCCAGGACAC  
 AGAGACTTCATCAAAAACATGATTACAGGCACATCCCAGGCTGACTGTGCTGTCCTGATCGTTGCTGC  
 TGGTGTGGTGAATTTGAAGCCGGTATCTCCAAGAACGGGCAGACCCGTGAGCATGCCCTTTTGGCTT  
 ACACCTGGGTGTGAACAATAATTGNTGGCGTTAACAAATGGATTCCACTGANCCCCCTATANCC  
 50 AGAAGAGATACNAANAAATTGNTAAGGAAGNCANCACCTATATTAANAAAATTGGCTACAACCCCGA  
 CNCAGNANCATTNGNGCAATTTCTGGCTGGAATGGNGACAACATGCTANAACCAANGCTAATATGC  
 CNTGGNNCAAGGGANGGAAAGNCCCCNNGGACNGNANGCCNNGGACCNCCTGCTGGAACNNT  
 GGNATNGNNTNNGCCNCNANTNNNCCCACTNGANAACCCCTTGCGNNNGNCNNTCCAGGANGNNNTA  
 AAANNGGNGGNNNGGNCNNGNCCNGNGGNNNNNNNGNNNNNCNGNNNNNCNNNCCNGNNNG  
 55 GNGGNNCCNNN



AGTGTATGGTGGGAATGGGACANAANGACAGCTACTTGGGTGATGAANCACAAAGCAAAAAGAGGAAT  
CCTGACCCTGAAGTACCCGATAGAGCACGGGCATCATCACCAACTGGGGACGACATGGAAAAGATCT  
GGCACCACTCTTTTTTACAATGAGCCTTTGNGGTGGNCCCTGAANAAGCATCCCAACCNTTNTAACCG  
AAGGCGCCCCCTTGACCCCCAAGGCCAACCCGGGAGAAAATGACCCAGATNATGGTTTGAGACTTTCAA  
TGTCCCANCCATGTATGTGGCTATTCANGCGNGCTTGCCCCNTACGCCTTTTGGACGCACAAATTGG  
CNNTTGNGCCTGGACTTTTGAANATGGGGTCACCCACAACGTGCCCTTCTTTTAAAGGGCTACCCCCCT  
TGCCCCCCCNCATTATTGCCGTTTGGGACCCTGGCTTGCCCCGAAANTNTCANCCCGNCTACCCTTAT  
TGAAAAANTNCTTGACCCGAACCGGANGGCTTTTTCTTTTNNGAACCCCCCNTNGACCGNTGAAAAA  
TTGGTCCCGGGGACCTTTAAAGGGGGGAAAAAATCTGNGGCTTACCNTAANCCCCCTGGGANNTTTTTAA  
AAANTGANANAGGGGCCNCTTTGNCCGNATTNNTTTTTCTNTTCCCNNTNTNAAAAAANTNTTTA  
AACTTTNCNTTNNGGGNCCCGGTGATTNNCCNTTTTNGGAAAAAGAACGGTTTTCCCCTTTCCCCTT  
TANAAACCT

TTNANCAAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGATCCCCGGGCTGCAGGA  
ATTCGGCACGAGGGCCATGGGCGCGTGATTTCGTGGGCAGAGGAAGGGCGCCGGCTCCGTGTTCCGC  
GCACATGTGAAGCACAGAAAAGGCGCCGCGCGCCTACGCGCCGTGGATTTCGCCGAGCGACACGGAT  
ATATCAAGGGCATCGTGAAGGACATCATCCACGACCCGGGCGCGGAGCGCCCCCTTGCCAAAGTGTT  
TTCCGGGATCCGTACCGTTTTAAGAAGCGGACAGAGCTGTTTCATCGCTGCTGAGGGCATCCACACCGG  
CCAGTTTGTGTACTGCGGCAAGAAGGCCAGCTCAACATCGGCAACGTGCTCCCGGTGGGCACCATGC  
CTGAGGGCACCATCGTGTGTGTCTGGAGGANAAGCCTGGTGACCGAGGCAAGCTGCAAGAGCCTNT  
GGAAACTATGCCACAGTCATNTNCCACAACCCTTGANACAAANAAAAACGCGAGTGAAGCTGCCTTCN  
GGCTCCAAAAAGGTCATNTTCTTTGCCAACANAACCTGTGGTCGTTGTGGTGGCTGGANGTGGCCNCA  
TTGACAAANCCATTNTGAAGGCCGCGCCGNGCCTCCCCAAGNTTAAGGGNAAAAGGAACTTGGTGGNC  
NCNGGTGCNGGGNGNGGNCATNAAACCTTGGNAGCCNTTCCTTTGGNNGGGGNAACCNCAACCAATT  
NGGGAAANCCNTTTTNTTTTCNAAAAANCCCCCTTTTGGCCGGNAAANNGGNNTANTTTTNTCC  
CCCGGAAAGGGCCNTTTTCNGGGGAAACCAAAAAATTGCCCCGGGAAAAAGGNAACCTTTGGGGTT  
NGGGGTTNAANNAAAAAGCTTTTTTTTTTTTCNAAAAAAAAAAAAAAAAAACTTTGGGGGGGG  
GGN

[illegible]

NNCAAANCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAAGTGTGGATCCCCCGGGCTGCAGGAATT  
 CGGCACGAGGATTATAAGTTACAATGGAAGGCAACTTCATGAATTAGATGGGCTACTAATTCAATGTA  
 ATGAACCACACACCAAAATAAACAGTAGAAGGTGCTTGTAAATTGTTGAGAGAAATTAACAAAGTAGA  
 ACCATGTTGTTGTTTCAGTCGCTAAGTAGTGTCCAACTCTTTGCAACCCCATGGGCTGAAACACATCAGG  
 CTCCTCTGTCTCCACTATCTCCTGGAGTTTGCTTAAATTCATGTCTATTGAGTTAGTGATGCCATCTAA  
 CCATCTCATCTCTGTTGTCCCCTTCTCCTTTTGCAATTCAGTCTTTCACAGCATCAGGGTCTTTTCCAGT  
 GAGTAGGCTCTTTGCATCGGGTGGCCAAAGTATTGGAGCTTCAGCAGAAACATTTCGATCCTTAAACTG  
 AGTACTGTCTTAGTTTCTCGGGCTGCCTTAACAAAGCACTACATACTTTAAACCAACATACTACATAC

0587643-050604

5 GTTAAACCAACAGGCAGGGTTGTTCCCTTCAGAGGGCCATGAGGGGGAATCTGTCCCANGCCTCTCTC  
CTAACTTCTCTTGGTCTCCTGGTCATCTTTGACTGGCCNTGGCATGTAAATATCTCACTCCAGNGCTCTG  
NCTTNTCTTGACATTCTCTCAAGTTTCTTCACATAAGTCTACCTGNCATGCATGGTCTNTTTTTTGGGGN  
CCAGNTTCTTTTCTTTTATAAAGGACTNCAATCCTGGTNGGATGAAGGCCNCCCCCTTTTGANCCAT  
CATGGACTTGGATACCCITGGGAAAAGGGCCGGANTTTTCCNAAAAAAAAANCCCCCTTTTGANGGT  
TNTTGGGGGGTTAAGGNCAC

10 NNNATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTC  
GGCACGAGGGTTGGCTTCGTATCGTGGGCTCGTCCGCTGTTACCCACCTACCAGAGCCCTTCCCCGCGG  
GGCGGGACCTCGTAACGGCCAACTCCTTTCCAGCTGAAGAAACACTTAAGTTCTGGAAATAGCGACCC  
AGTATCATGGCTGGCAGCCCTAATGAAGATTGAGAAGGAAGCCGAATTACTTACGTGAAAGGAGACC  
TATTTGCATGTCCCCAAACAGACTCTTTAGTGCATTGTATCAGTGAGGACTGTCGAATGGGCGCTGGG  
15 ATAGCTGTCCTCTTCAAGAAGAAATTTGGAGGAGTGCAGGAACTGTTGAATCAACAGAAAAAGTCTGG  
AGAAGTGGCTGTTCTGAAGAGAGATGGGCGATATATATATTACCTGATTACAAAGAAAAGGGCTTCAC  
ACAAGCCAACTTATGAAAACCTTACGGAAGAGTTTAGAGGCTATGAAGTCCCATTGTCTGAAGAATGGA  
GTCACCCGACCTTTCCATGCCAAGGATCGGATGTGGTCTTGATCGTCTGCAATGGGAAAAATTTATCCCG  
AATAATTGAGGAGGTCTTTGAGGCAACAGACATCAGAATTACTGNGTACACACTCTGAACAGAAGAG  
20 CATTTTGGATGTGTCTACCTTCTGCATCACCTGGGCCACAGGACTGGAGCAAACCTGACCTTAAAAATGGT  
CAGAGGACCCGTTTCTTGNGAAGTAGTCTGGGTTACANGNCNAACTGGGTTGCTGTATTCTNCANGA  
TTGAATGGGACTTNTGGGAGGAGGGGTTCTTGTGCTTAGGAATTTTNTTTTTTTCAGGAANGGAANGGG  
GANGGGACCAATNTTGGGCCNAGGACCCCTTTTGTCTNGGGAANGCCTTGGGAATGGGTTTGGGTTGC  
CCTAGGGGGGANCNTTGGGTTTTCTGTNTNT

25  
30 AAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTCG  
GCACGAGGCTGATTTTTTTTTTTTTTTTTTNGTITTAATGGNCAAGNGNNTAANTTNANAAANNANNNC  
CNGNCNNGNCCNTNTGTNNAAGCCNTTAANNATTTTNTTNATNTAATNTGGATNNNTTAAACGTTN  
NAANGGNCNTTTAAACTNTCCNTAAANTTCNNTNAGGAAAAAGGGANTTTGNNANTNTGNGNGNGC  
CNGGGNCAAANGGNAAAAAACCAAAAAAAANCCCCAGGGNAANGGGAATCCCNTAACNTNAAAN  
CATTTNNNAAGGGCTTNNANGTTTTTTTNNAANAGGGCCTNNANNAGGGAANCCANTTTTTTTTG  
ACCNNTTNTNCCNNGCCAANAANAAGGGAGTNTTTTNAANTAACCNTTCCAGTTNANGGACCAG  
CCCAGNATTCCTCATTNCAAGCCCTCNATNAGNCCCTGNGGGACCCAAGGGGCAAACCTGTGTTCGG  
35 AAAAGGTTTCTNTAGGTTGGGAAAGGCCCAAAGCATTTTTNCCCCCATTCAGNNGGGTTAGGACCCC  
CCCCCAATNTTAACAATGGNCCCANCCCGTTTTTTTCCGGGNATGCCCNCCNCCNCCNAAATGAN  
CCTGCACCGGGGGGGGCCCGGGNCCCAATTCNCCCTTAAAGGGGAGGNNNNNTNAAANNNNNNNN  
NN  
NN  
40 NNN  
NN  
NN

45 CAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
CGGCACGAGGGTCCCGTATGTGGCCCAAGAGATCCAGGAGGAAATCGATGAACTGCTTCAAGAACAG  
CGAGCCGACATGGACCAGTACGGCAGCATCAGCCATGGCATCGTGGAGGTCGACCCGATGCTCACCCC  
AGAAGAGCGTCACCTGAGCAAGATGCAGAACCATGGCTACGAAAACCAACCTACAAATACCTGGAG  
CAGATGCAGATTTAAGCGGGGAAGCGCANCGCCAGTGGAGGGAGGNTGGGCGGGCAGCAGACGTC  
CAGAGGTCTGGATGGACGATGGACCGACAGTGAATTCAGAGGAGTTCCTCGACACTCAGATCTCCTG  
50 GAACATTAAGACTATNAAGTACTACTGTAGAGTCACAATTTCCATTCTTTTAAATGGGCGAAAAAATG  
TTAATATAACAATATATGATATATAAACCTTAAATGAACAAATGATCTATTGCAGAAAAAANNN  
ANANAAANNNAANAAAAAANNN  
ATGGGGGGGGTNTTANANNN  
NN  
55 NNN  
NN  
NN





TNCCTCAACNTCCGCNTTAAAAATNGGGGCNTCCCNANNGGCNTANTTAAAAANNTACGTACACNNA  
 NCTTACTATTTTTTCAANNAGNNTGAAATTCNNNTNNNTANNTNTNTTATNNCTANTNGNTCTTCAN  
 NNTAATNNAANNTNNATCACCATCINTNTNANTTTCANTAAGAACTANNTNTAGATCATATNTNCAAN  
 NTGNNTTNTATNTCGANNANTTATNATNTCNCAANNTNTGNNTTANTGATNTTCNATTTTTTNACT  
 5 ATCCAAAANTNNNCGCNTNAAANATNNCNCAATAGTAGNCNNTNGGNCCANCNGTNATNTTCTA  
 TCANCANTTACTCTANNAGTCTAATNTTANCTTNTGGTNANNTNATTTACNTATNGNNATCAANCN  
 NATTAAANTTNTNGTACTANTCATATNNNGTGNANTTTNTTCNTNANTCGATNNATTATAGNTCNNCG  
 CANAGGNNATTTTTNTNGAACANNCATTATATANNNNNAANGNATAANTANNTNNNGNAGAAGNNTT  
 NNNNGCTCTTNTTCTNNGCAANTGNNTANNTNNTNAACTAACTCNACNTCAGNTANCTTTTNCNN  
 10 NNCCNTCANNAGTNNCGNNGTNAANCANNCANCGGCNTNATTATNCNATATGTNTNNNATCANCGA  
 TGCGCNNNNAGNNTACTGTNCANCGTNTGTATNNNCNNTNGNNNTCNTANTNNGNANCTCAGCATA  
 TTAGCTNANGTTTNTCTGNAANCGCTNGCNTTANNTNTNTACNATCNGNATATAGATTTNTGNCTANT  
 NNTTNTACGCCTNAGCNNTNTNNGNTGCNCGCCNAATNCAGANTNTCGNATNTGCGNACNTNCNN  
 GGANNATATACTTANNTGCACNGATATCTNATATATCTNCTGATNNGTCANNNANTNCGATCATAANT  
 15 NTCGNATCATNNNTANNTANNTGATATGCNCGNNTNNTGCGCACACNNTGAGACGNNANNTAAGA  
 NNNNGTGNATANTATNACATTTTNACAANGGAANNGACACNCNACNNNTNTNGNTNANNTAATGA  
 TGATACGTNTNANAGATAGANCGANATATNNCAGNGTCTGNANGTGCNATANTNCNCGANTCNATCA  
 CTTACTCATTTANGCTTNTNNTGNTCNCGAGATNANNCNNTNATANATNTACNTGTCTNAAGANAANT  
 TCNTACNCGNNGTCANATATNTCTANTGANNANNTGTTACGATAGTNTACGTACGANCNNAGTNTCNCT  
 20 CNANAGNCANNACATATACTATNACGACNANTCTAGACNANATACGNCANAGNNANGTGANTAGN  
 ANTNNCNTANTCTNTNNTCNCTACATTAATANNNATAGTGAGACGNGTNNCTTNATANNTAATAACNN  
 TNNGAGTNNNTNAGATATATGCTNAATCTCTCGCC

NNCAANANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGC  
 AGCTGCAGCGCCTCTCGTCTTGTAGGCTCTCCTAGCTATCGCCTTTTCGCTTCCGGAAACATGGCCTCC  
 AGTGTGGCTGTCTCTGATGGGTGTCATCAAGTGTTCAACGACATGAAAGTGCCTAAGTCGTCGACACC  
 AGAGGAAGTGAAGAAGCGCAAGAAGGCGGTGCTCTTCTGCGCTGAGTGAGGACAAGAAGATATCATC  
 CTGGAGGAGGCAAGGAGATCCTGGTGGGTGACGTGGGCCAGACGGTAGACGACCCCTATGCCACCT  
 30 TTGTCAAGATGCTGCCAGACAAGGACTGCCGCTACGCCCTCTATGATGCAACCTACGAGACCAAGGAG  
 AGCAAGAAGGAGGACCTGGTGTTCATCTTCTGGGCCCTGAGTGTGCACCCCTTAAGAGCAAAATGAT  
 CTATGCCAGCTCCAAGGACGCCATCAAGAAGAAGCTGACGGGGATCAAGCATGAATTACAAGCAAAAC  
 TGCTACGANGAGGTCAAAGACCGCTTGACCCCTTGCAAGAAAGCTGGGGGGCAGCGCTTGTCTCTCC  
 TGGANGGCAAGCCTTTGTGAGCCCCCTCACCCCTGNCTGGACATCTGGCAGCCCCAGACCTGNCCACG  
 35 GGGGTGTCANGCTTGCCCCCTTCTGCCANACCGGAGGGCTGGGGGAATCCCNACGGGGGGANGGCANTC  
 CTTTNNCCANTTGCCAAAGCCCCCCCCGACCCCTGGACNTNTTTTCTTINACCCCTTGANGTTTGGCN  
 TTCCNAACCGNTTTNGAACTTNNANCCNTTTGGGGTGGAAAAAAACAAATTNCCCCCCCAGGAANCC  
 CTNTTTGGGGGGGGCCTTTTTTTTTTAAAAAAACCCCAANNCCCTGCCGNNCTNCCCTTTNCCAGNN  
 NGGNA

GCCCTATNNGGAGCNGCATNACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGTT  
 TCATGAAGATGGAGAATGCTGNGTNTATGATGAACCATTAAGTGAAGNGNCTNNGNGCTGCCAAGCATT  
 AGGTNGGGANNACAAAGTTTGTCTCCTGGTTCCAGGGCACGATGCATAATNAAGCAACAATCTTCCTT  
 45 TGGGAGAACCTATTCACTCCCTTCTTATTGCAGCCGNCNCTATCTNCANGGNATACTTGNACTTNTG  
 ATGCANCATGANCAATTAANGCGAGCAAAGCNCCCTTTTTNCTGNTGCGTGGCAAGTNACAACNNTN  
 GANTTTGGCCTTGATAAAAAANTTCAGGTTTTGAAAACAAGATGTCTTGCTCCTTTTCCAAATCCCAACGG  
 NATAAATCCCAGTNTTAAACNCTGCATTCTANTACTGNTGNTGAGANATACAATACATGTTTTCTAGT  
 NCATATAATCNTTGGGTNCTATATATACATATNNTATAATTNTATGCTGATGCCCCGATTTTTTCATAN  
 50 NATACCTGCATTTTACTGTNAAACATCAAGNCCCTCTGAGTTGTTTTTANNANANATTTNCNGCNNTT  
 GCGGTAAAAATTCNCCTCGGNTNTGAAAANTTCCATGGGTCCNCTCCTANCNANNCAANNTCNTCAC  
 TTTGGNAATTGAAACTANTATINNCTCAAACNNGNATCTCTTACCTCTTGGNCCTGGGGGTTTAANNT  
 NACACCTCNAANGGCTTTCCTNNTAGGNTTNCNNANNNGCTANATTCNNTTNTCAANCTNTGCTTCNT  
 55 TTCAAGNANGCCNGGNTNNTTNTTNCNGAANTACAANTTTGGGACCCGNATANTCACNTCANNGNN  
 CTNTTGTATNNNNNNNAANGGCTGNNGCTTTTTGTNTNGTGNNNNNCTNNTTACNATNAACANANA



GGNNGGCTNCNTNTACANTNNCTNGNNCTNCTTTTCNNTATAANCCCTTNGTNNNCCANGNCNNCANA  
ANACCG

TopHat 2.4.5

5 GNNGGGCCGGNNNATNNNTTATNTTTNTNNTATNTTTTTNNNANNNNTTTTTTGNTACACCTTANTNN  
GGGGNTCNCNGNGNNTTCAATGGNGGGNGCGGNGGGGCCNNCAGNNTTNNGCCCNCGGGAGTCGCAT  
NACANGGNGGCCGCTCTNCANTATGNNTTCCTCCGNNCTGCANCATCNGCNCNNNCNCCTCNTTCNTT  
NCNTCNCNGCNTCNCNTNNGTCNCAAGGGGGANTTANTNTANNNAANAGTNTCNNNNTTGNCAACT  
TATNTNNTNTTATCCNTNATATNGNAGGCTNNANTCNGNATCTNGAGANNCGGGCTNTCCNNNCNTGC  
10 TTTAANTNTTTTCNANNGNNGNCANGANNNCNCANTCTATNCTNNANNAATNTNNNATGTCNCNNNA  
NNTTNTCGCACGANTCNTCGTTNNTNCAAGNNTNTGTNTTCTNGNNCNCCTGNNNNCTCTTTCNNNNC  
TNNNATNCCTCAGTTTTNTTNNNNCNCNNACNATTNTCTCNATCNCANTNCNTNTACNTNTANCATCG  
TTNNANANATCNTTNCNTTNNNNNTNTTNTCTACNTCTNCTNANANTTATTTCCNCNTCTANTCNNNTA  
ANNNTTCGNNTTNACCTNTTTAGANNNNANNGGANNTTCCCNNCTNCNCNNGATCNCGTTNCCCNNN  
15 TNCTCNGTCNANCCNACTCATTGCCTCTATNNTCNTANTNTATNTCTTTNGANCGCCNTNNGNATA  
CCATTNATTATAATACGNANATNNNTCNCNCACGNGNCCANTNTCTCTNNCNNNNNGGNTTNTGNTN  
ANTNTCCCAAATCNCNNCNGACCCNTNNATGGNCCNCCNNNTANNNCCANNAGNNNNCGATTAGNA  
CANNNGNTNTNGGACGNTCNNATCNATNNTNTNCTGNNGCNTAGNCNATTTTCNANNTGNTGCTNGCG  
NTANTGCNCNTNTCGNNNTAATCGNTGTNTGTTNANNNTGNNCTCTANTNGNCNGGCNNTNGGTNNNC  
20 TCTANTGAGTCCACGNTNNNNCTNACTCTGTTGNACGNGATNTTGCTCNANCTNACNGCTCNTNTA  
TNCNCNCNTGTNNNGCNNNAGTNATCNTCCTATTGTNTGTTACTCCTTNTTAGNCTACANNGTTTNGCT  
NTNNNTGCTTGACCNCTNTAGACCGNGCTTCCNNTNATCCTCATGNGATGTNTNNCNTGNTANNCC  
TCNTCCGCTNTTNNCNTNTCNANTGATANGAGTCTNNNTNATNCGCNCNTGTNNANGTANTANNATAC  
NCNNANCTCNATGNCACTCCAGTGATGNANGTNNATANNTAGTCTNNGTCATCGTANCANTCNNNAT  
25 GGTACNNANTCTCTNGNGTNGNCGCGTNGTATGTGGNNGCNCNTNTTCNATGACGNTNTANAGCAGTA  
NNGNTACACNTNTATAGTCCGTNTNACNAATCTCTNGNTTNANCNTNTATTNCNNCNGCTCNCCTCCC  
GN

30 GNNGGGCCGGNNNATNNNTTATNTTTNTNNTATNTTTTTNNNANNNNTTTTTTGNTACACCTTANTNN  
GGGGNTCNCNGNGNNTTCAATGGNGGGNGCGGNGGGGCCNNCAGNNTTNNGCCCNCGGGAGTCGCAT  
NACANGGNGGCCGCTCTNCANTATGNNTTCCTCCGNNCTGCANCATCNGCNCNNNCNCCTCNTTCNTT  
NCNTCNCNGCNTCNCNTNNGTCNCAAGGGGGANTTANTNTANNNAANAGTNTCNNNNTTGNCAACT  
TATNTNNTNTTATCCNTNATATNGNAGGCTNNANTCNGNATCTNGAGANNCGGGCTNTCCNNNCNTGC  
35 TTTAANTNTTTTCNANNGNNGNCANGANNNCNCANTCTATNCTNNANNAATNTNNNATGTCNCNNNA  
NNTTNTCGCACGANTCNTCGTTNNTNCAAGNNTNTGTNTTCTNGNNCNCCTGNNNNCTCTTTCNNNNC  
TNNNATNCCTCAGTTTTNTTNNNNCNCNNACNATTNTCTCNATCNCANTNCNTNTACNTNTANCATCG  
TTNNANANATCNTTNCNTTNNNNNTNTTNTCTACNTCTNCTNANANTTATTTCCNCNTCTANTCNNNTA  
ANNNTTCGNNTTNACCTNTTTAGANNNNANNGGANNTTCCCNNCTNCNCNNGATCNCGTTNCCCNNN  
40 TNCTCNGTCNANCCNACTCATTGCCTCTATNNTCNTANTNTATNTCTTTNGANCGCCNTNNGNATA  
CCATTNATTATAATACGNANATNNNTCNCNCACGNGNCCANTNTCTCTNNCNNNNNGGNTTNTGNTN  
ANTNTCCCAAATCNCNNCNGACCCNTNNATGGNCCNCCNNNTANNNCCANNAGNNNNCGATTAGNA  
CANNNGNTNTNGGACGNTCNNATCNATNNTNTNCTGNNGCNTAGNCNATTTTCNANNTGNTGCTNGCG  
NTANTGCNCNTNTCGNNNTAATCGNTGTNTGTTNANNNTGNNCTCTANTNGNCNGGCNNTNGGTNNNC  
45 TCTANTGAGTCCACGNTNNNNCTNACTCTGTTGNACGNGATNTTGCTCNANCTNACNGCTCNTNTA  
TNCNCNCNTGTNNNGCNNNAGTNATCNTCCTATTGTNTGTTACTCCTTNTTAGNCTACANNGTTTNGCT  
NTNNNTGCTTGACCNCTNTAGACCGNGCTTCCNNTNATCCTCATGNGATGTNTNNCNTGNTANNCC  
TCNTCCGCTNTTNNCNTNTCNANTGATANGAGTCTNNNTNATNCGCNCNTGTNNANGTANTANNATAC  
NCNNANCTCNATGNCACTCCAGTGATGNANGTNNATANNTAGTCTNNGTCATCGTANCANTCNNNAT  
50 GGTACNNANTCTCTNGNGTNGNCGCGTNGTATGTGGNNGCNCNTNTTCNATGACGNTNTANAGCAGTA  
NNGNTACACNTNTATAGTCCGTNTNACNAATCTCTNGNTTNANCNTNTATTNCNNCNGCTCNCCTCCC  
GN

55 TTNNNAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
ATTCCGCACGAGGCAGCAACCGTCGCGATGTTGATGCCTAAGAAGAACCGGATTGCCATTTATGAACT



CACCTGCCCCCTGAGATCGTGCCCGCCACCCTGCGCCGCAGCCGTCCTGAGACTGGCCGGCCAAGGCC  
CAAAGGTCTGGAGGGAGAGCGACCTGCAAGACTACTCGAGGGGAAGCCGACAGAGACACCTACAGA  
CGAAGCGCCGTGCCCCCTGGTCCCGACAAGAAGGCCGAGGCCGGGGCTGGGTGAGCAACTGAATTCC  
AGTTTAAAGGCGGATTTGGTCTGGACGTGGTCAGCCACCTTAGTGAAGTTGAAAGGGATTGTTTTTG  
5 TGTGTAATAAACCTGTAAACAGAAAGAAAAAAGGGGGGGCCCGNNCCAAATTN  
CCNTAAAGGGGNNNNNTAAAAANNN  
NN  
NN  
NN

10 AAACTGGACTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCTCCTGG  
TGAGCAAGGTCTTCCGGAGCCTCTGGTCTGCTGGTCCCCGCGGTCCCCCTGGCTCTGCTGGTTCTCC  
CGGCAAAGATGGACTCAATGGTCTCCAGGCCCATCGGTCCCCCTGGGCCTCGAGGTGCGACTGGTG  
15 ATGCTGGTCTGCTGGTCTCCCGGCCCTCTGGACCCCTGGTCCCCCAGGTCTCCAGCGGCGGT  
ACGACTTGAGCTTCTGCCCCAGCCACCTCAAGAGAAGGCTCACGATGGTGGCCGCTACTACCGGGCT  
GATGATGCCAATGTGGTCCGTGACCGTGACCTCGAGGTGGACACCACCTCAAGAGCCTGAGCCAGCA  
GATCGAGAACATCCGGAGCCCTGAAGGCAGCCGCAAGAACCCCGCCCGCACCTGCCGTGACCTCAAG  
ATGTGCCACTCTGACTGGAAGAGCGGAGAATACTGGATTGACCCCAACCAAGGCTGCAACCTGGATGC  
20 CATTAAGGTCTTCTGCAACATGGAAACCGGTGAGACCTGTGTATACCCCACTCAGCCCAGCGTGGCCC  
AGAAGAACTGGTATATCAGCAAGAACCCCAAGGAAAAGAGGCACGTCTGGTACGGCGAAGAGCATGA  
CCGGCGGATTCCAGTTTCAGTATGGCGGGCCAGGGGTTCCGATCCTTGCCGATGTGGCCATNCAGCTG  
AATTTCTTGCCTGATGTCCACCGANGCCTTCCAANAAATCACCTACCACTGGAAAGAACAGCGNGG  
25 NCTAATGGACCAAANCANACTGGCAACCTTCAAAAAGGCCCTTGTTCCTCANGGCTTCCAACGAAAATC  
GAAAATCCGGGCCGANGGGAAGGCCGTTTACCTTACAGGGTACCCTACCANGGGTGGCCAAANC  
AACCCGGAACCTGGGGGCCAAAAAGNGATTGGAATACCNA

30 TTTGAGNCCTTANANGNGNNGTCGGTATTAACAAGGGGGANGGGCGCGNTATAGNAACTAGGTGGTAT  
CCCCCGGCNTNGCAGGNATNCANATTCNNTGAGGGNNTTNNCTTGAGCCCTGTAGGGGAGNNCNCG  
TNNTNGGGGGCNNNTCNATGANCTAGTACNNANACNNNTCTNTNAGNNATNTTTTNNNGTGN  
CNNTANANNNGANNNGATTGCNTNGAGCGTTNNNNNGGNTNNCTTNNATNCGGGNATNNGNAGCNAT  
TGTTNGGTTAGTTGNNTANAGGNNNTATNNTGANNATCCNNTGNNNNNGNGGAANGCANNAGGGNGNN  
35 NTNCGANNGTNCTNTNNNTGNACGATNTGACNNNTTNTTCGATNNNANAATNTNTTNNNCCAANN  
TTNGCTANATAGNNTNGTNNNNGCNANTAAACNNNCNANNNTANNANNGATTCCNANATNNNCCT  
NAANNCGNTTANCNNGTNNNNNAATNANCNTGGNNNCNGNTATNNNTCNAATNNNNNANNNTCG  
NGCAGCNTATGNACAATANTGGNTANNTNNANTNNNATTAGNNCNACTGATACNGNAANTNTNTNNC  
CTNNTNCNATTTNNGTTAGNNNNNGNNTNNNNAGNGGGTNNANTTNTNNNNNGGNGTNTCGTGTAN  
40 TNNAANGTNNNNAGGGNNGGNNNTGNNANNTNNGAANGNGGANANNTATGATGCNCNNAGTACT  
TNTGGAACCTCATTNNGNANGGGGNTNNGTNTCTGNANGNGCNNNNNGTGCATGCNTANTNTNNNA  
NCCNNTTATNGCNCCTCTGTNTGNGGNGNTNNNTGGANNTTNGGNNNGTTANNNNNGNNTNGNNGTAG  
ACNTGTGTCGNNNNAGGGTTTNTNTGNGCTNTCNGGATGTTGNNTTGANCACTNNGTANATNANNGG  
NTNANTANGNATNANATNNNTAGGACGGTATGGGAACCNNGGTANATNNTTTGTNNNGTNNNNA  
GTANNNGGTGNAGNNANTANATCTANAANCAGGAACCNACNTTNNANNNNGNNNNNTTCGNNNTGN  
45 AGTANTAGNCGGCGCNGNNNTAAGTTANCTTGCNACGATNCGTTGTGTCNCNCNCGANATANGCGNTT  
NNACGTTNCTGNTCNNNCACGTNGCTCNNTNAGNGTTCGNTNNCNTATGNAGGANTNTGNACGTNTN  
CGAGNGAACNNACATCGTCGNATGGCNTNNAATGNGNGCGTATTNGNCGTNGNNGACNANTGACGCA  
NCNATANNCTNTNNGTACGTANGTAAGTCNNANNNTTNTNNTTGG

50 NCAANNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCTT  
GAAGAAGAAGTACCCAATGGCCAAGTACCTGTGTGTGTGCTAATTGTGGCTGGAGTGGCCCTTTTCA  
TGTACAAACCCAAAAAGTAGTCGGGATAGAAGAACACACAATTGGCTATGGAGAGCTGCTCCTGCT  
CTTGTCTCTAACCCTCGATGGACTGACCGGTGTTTCCAGGACCACATGCGAGCTACTACCAAACAG  
55 GCTCCAACCACATGATGCTGAACATCAACCTTTGGTCGACACTGNTGNTGGGAGCTGGAATCCTGNTC  
ACCGGGGAGCTCTGGGAGTTCTTGAGCTTTGCCGAAAGGNACCCTACCATCGTCTATAACATCCTTCTC

TTTGGCCTGACTAGTGCCCTGGGCCAGAGCTTCATCTTCATGACAGTTGTGTATTTTCGGTCCCCTGACC  
 TGCTCCATCATCACCACAACCTCGAAAGTTCTTCACCATTTTGGCCTCTGTGATCCTCTTCGCCAACCCC  
 ATCAGCCCCATGCAGTGGGTGGGCACCGTGCTGGTGTCTTGGGTCTCGGTCTTGATGCCAAGTTTGGG  
 AAGGGAGCCCCAAGAAGACATCCCACTANGAAGAGAGAAGACTACCTCNACTCCAAGAATATTTAAAN  
 5 TTATTTTCTCCAACAGTNGACATCTCTTGGGAAAAACGGACACAATTAGAGATAAAAGGGACTATTGTC  
 ANTCTGGGAAAAAANANNNNNNACNNNNNNNTNCCNNNGGGGGGGGGCCCNNGGCCNAATNTTCC  
 CCCCTTTTANGGGGGGNGNNNTNTAAAAANNNNGGNNNNNNNNNGGGNNNNNNNGNTTNNNNNNNNNT  
 NNNNTTCNAATNNNGTNGNNTNNNNNCNNNGNNNNNNNTGGGGNNNNC

10 GCCTATAGNGAGNNGNATTACAGTGGCGGCCGCTCTAGAACTAGTGGGATCCCCNNGNCTGNAGGTT  
 AACGCTGCAGCCTCCGNCGTACCCGCGCCTGANCCNNTGCCAANCCTTTTGAACAAGAAGANGGNT  
 GNGCCTNCCANGNATGNTGATCTTGGCAAAACTGNCANGGATGNNTTCACCNAGGGCTATGGATTGCG  
 15 NTTAATAAAACTTGATCTGAAAACAAAATCTGAGAATGGACTGGAATTTACGAGCTCAGGTTTCAGCCA  
 ACACCGAGACCACCAAAGTGACGGGCAGCCTGGAAACCAAGTACAGATGGACTGAATATGGTCTGAC  
 GTTTACACGAGAAATGGAACACTGNCAACACGCTGGGCACGGAGATTACTGTGGAANATNAGCTTGC  
 ACGTGGCCTGAANCTGACCTTCGATTTCATCCTTCTACCAAACACTGGGAAAAAAAATGCTNNAATCA  
 AGACAGGGTACAAGCGGGAACATATCAACCTGGGCTGNGATGNGGATTTTGACATAANTGGTCTTCC  
 20 ATTCCGGGGCGCTCTGGNGCTGGGNTATGAANGTTTGCTGGNTGGCTACCANATGAATTTTGAAGT  
 CTAAGTCTCCAAGTGACTCATAAGCAACTTTTNCAGTTTGGCTNACNANAACCGNNGAAGTNCCAGC  
 TTCNCACTTAANTGTNAAANTGATGGGAACCNAGTNTTGGTGGCCTCCCTNTTTTCCAGAAAGGNG  
 AACNAANAAGTTTGGANNACCCNCGTTAATTCTNGCCNTGGACCCNGAANGANAACAANCAACC  
 ACTCCTNTTCGGAANTTANCCNCCCAAGTCNCCANTTTTNNAAACNNNNNCGGCCNNGCTTTTNTCT  
 25 NTANGTGGAACCAACNCCNCCCTGTTTNGGATTAGGGATATACTCCNNAACCTTNAANTCCNNGG  
 TNTTAAACNNNCCTTNGTCTGCTTTGNTTGGNC

30 GCCTATAGNGAGNNGNATTACAGTGGCGGCCGCTCTAGAACTAGTGGGATCCCCNNGNCTGNAGGTT  
 AACGCTGCAGCCTCCGNCGTACCCGCGCCTGANCCNNTGCCAANCCTTTTGAACAAGAAGANGGNT  
 GNGCCTNCCANGNATGNTGATCTTGGCAAAACTGNCANGGATGNNTTCACCNAGGGCTATGGATTGCG  
 35 NTTAATAAAACTTGATCTGAAAACAAAATCTGAGAATGGACTGGAATTTACGAGCTCAGGTTTCAGCCA  
 ACACCGAGACCACCAAAGTGACGGGCAGCCTGGAAACCAAGTACAGATGGACTGAATATGGTCTGAC  
 GTTTACACGAGAAATGGAACACTGNCAACACGCTGGGCACGGAGATTACTGTGGAANATNAGCTTGC  
 ACGTGGCCTGAANCTGACCTTCGATTTCATCCTTCTACCAAACACTGGGAAAAAAAATGCTNNAATCA  
 AGACAGGGTACAAGCGGGAACATATCAACCTGGGCTGNGATGNGGATTTTGACATAANTGGTCTTCC  
 40 ATTCCGGGGCGCTCTGGNGCTGGGNTATGAANGTTTGCTGGNTGGCTACCANATGAATTTTGAAGT  
 CTAAGTCTCCAAGTGACTCATAAGCAACTTTTNCAGTTTGGCTNACNANAACCGNNGAAGTNCCAGC  
 TTCNCACTTAANTGTNAAANTGATGGGAACCNAGTNTTGGTGGCCTCCCTNTTTTCCAGAAAGGNG  
 AACNAANAAGTTTGGANNACCCNCGTTAATTCTNGCCNTGGACCCNGAANGANAACAANCAACC  
 ACTCCTNTTCGGAANTTANCCNCCCAAGTCNCCANTTTTNNAAACNNNNNCGGCCNNGCTTTTNTCT  
 NTANGTGGAACCAACNCCNCCCTGTTTNGGATTAGGGATATACTCCNNAACCTTNAANTCCNNGG  
 TNTTAAACNNNCCTTNGTCTGCTTTGNTTGGNC

45 TTNAAAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGGATCCCCCGGGCTGCAGG  
 NCNAGGTCGAGCTNCACTGCGGCAGCAGCAGAGCGGAGTGACATTCTGATTGCTACGTTTATATAT  
 ATCTTGAAGCTAAATGTATATATGAGTAGTTTGCNTGAGATAACACAGTGTAACAGTAGACACCCA  
 GAAATTGTGACTTCTGTGTTCTCTCCATTTGAGTATTTTGTAAATTTTGTGAAATATTTGTGGACATAAA  
 50 TAAAAACAAGCTACACTAATTCTACTNAAAAAAGGCAATNCAAGTATNANGAGAA  
 ACCNACANNTAACCCCTGAGATCNAGCCGCCACCTGAANCGNNNCTTCTGNGGGGGGGGGGGGGCC  
 CNNCCCAAAGGTNTGNAGGGAGAGCNANTNTNCCNNNNNNNNNTNNNNNNNAANCCNNNCNANANN  
 NNTACNGACNAANNCCNNNNNTTTGNGGCCNNNNNNNTNCCNTTGNCCNNNNNTNNNNNNNN  
 NNCNNNTTCCANNNNNNANNNNNANNNNNNNNNNNNNNCNNGNNAANCCNNTTNNNTNNANNNNN  
 55 NNGGNTTTTTTNNNNNCCCCCCCCCCCCCCCCCCCCCCCCCCCCNNNNNTNNNNNNNNNNNN  
 NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNTTANAANNNNNNNNNNNNNNNNNNNNNNNNNNN  
 NNN



NCGNCANNGNTCGCTACCGTNTANNNNTNNNNNNNNNTNNNNNNNNNNNNCCCNCCCCCTCTCTCN  
 ATCNCCACNTCTCCCTCCCTTCTNCCNCNCCTCNNNNNANNNNGNCNCGANGNGCAGTNCNTGCCC  
 NTTTTNCACAAAACTGGAGCTCCACGCGNGGGCGGCCGCTCTATATCTAGTGGATTCCNCGGNTGN  
 5 NGGCAATTATTATTTCTNCTTATTTATACACCTTCGAATACACTCAATNTANNTATNATNGCCCACTT  
 CTCATCCCTATNNTCGNGTTCCTNTNCTTCTTGTCTNNANACACANCCCATCTCATTCTNATCNAC  
 NTTGNTTNTACTAGNTANTTCGNTNNNTATTCTTCATTATTTTNTATANTNTNNATANACTANATNA  
 TTNTAANTNCNATNTTGTCTTTCTTCATCTTNCNTTAANACNANTCTNTTTATTNCAAAATNTTANT  
 TTTATTTCAACANANTTNTNANTTATTNNNCCCTNCCCTNCTATGTNNATATTCTNATTTNTNATGAACT  
 ACTCTTNANNTTCANTTNATTCTCANTATNTANTNACNATTAATATNATGTNNCTNNNNTNCACNTAT  
 10 TNNATACCCAANTATCTTTTCATATCTCANACNNCNTTTNATAATCANATCTATNTCTNTNNAATCTT  
 TNACAAGCTNNCNTAANNTCTANNTCATNATTATTTCTNNNCTGNTTANANTNNANTTNNATTNANNT  
 NCACCTTNTCTCAANTATNATNTCNATGTACNATANNNCNNNNCANNAAACTCNTTNTNCTNTTCCN  
 NNCCTATTNCTAATCNCTNTAANTTCATNCANTNANNTCTNANTNTTANTNTTNTCTNNNTTANCTCTC  
 ATCCANCATTNTCTNCTNCTATTNNNCNACCNTCTNCCNTNTNTTCATANGATANANTATNTTCATN  
 15 NTCAAACATTNNCCTNTAANTTCTTATAACTNNNNTTATNTNAAACNNNNCCATGTTATCTNATCNAC  
 ANTTACNNTTCTTNTATATATATCTCNCTTTTANCNTNGCATNGNNAAGTNGCNTTTTATCTAGCNNTA  
 TNNCTTATCTNTNTCATNTNCTANNTTANATCTGNTCTCNTANTATACTTCTCANATANGCATA  
 TCANCTCNACACANTTCNNANCACTGTTATNNANCATANCTACNNTTATNCTNTATCTCTNTNNNNCN  
 TTAACANNTACTCANTATTAAGTNGTCATATCTATCTNTNATTTNTATNNNNTCATACCNTATNNTCT  
 20 TANATCTATTNATTCTTANTGTCATTATTATACNNTTNTANAGNATAAATTTCTNTACNTANCACTATTA  
 CATTCTCTAGCGCGATNACATTNTCTTNTNCGCTNANNNCCNCAGTCTTNTACTTANATNATNTNTA  
 TNCCTACTATCCNNACTCTNTNACNTANAATCTANTTNCATTNANNNTTNTCCCTCTNNGNCAATANAC  
 NNANANGTCNATNCNANGNCTGNACTATAGACACACTATCCGATNNNTTNTCATACTCTNTNTCAC  
 TANNTANCCC

TTGAGANCNTNNNNNTGGNGNNGNANTNCANGGGGGAGTACGCTCTAGAACTAGTGGATCCCCCGGGC  
 TGCAGGCAATCCNGCANGAGGAGNNGNCANCTTTCTTCGGTCTGTCCTCGANTCCGGGGGGCATGCTN  
 ACANNNCTCGGCTTCAACCNNTANTCGNGTTGCNNNNCCANCNCTAGNGNGGNGANNTNCGGGGNN  
 30 NNGNNNTCTNNNNNGGTNANCNTGNGCNCNTNATNAANTCANNGAANNANANCGANGNGCGNN  
 NNGTNATNCNAGTCCATANCNNNTGCNTTAGCCAGNNCCNNGNTNCTGGAGNANGCTNGNATNGCN  
 GNNTNNNATAGNCCNNTTNNNGNANAATAGACNNATCNACAGGGGNNAGCNGTNGGTGANGNTNGGA  
 GAGNNNTANCATGCCNNNGAGNTACNTGTTNACCNGATACGGGACCNCGATNGCNCNNNTNCCNTA  
 AGCNCNGNANNCGCNGTCTNCCNTCTGNGCNCNNNTTNTTNGGNCNCNCNNTAGCCNATNTCNATT  
 35 GGANCAAGAGNCGNTCGANANTCNTNCANGGATCNCNCTNGCNGAGNNNGNGCNCNATCCANNNT  
 GNNNTTGNNNNTCTGNNGNNCANANNACNNNTTNCGNANGTNNNGNNAGTGTGNTNNNACNATTNN  
 NCNNTCGAGAANNCGTNGANCNATNTCGNNTNNNTNGGAGTNCCTGGACNNTCCNGAANGNNNCG  
 GNNNCGGGATTNANANGANNNTCTTCTNCCNNGAAGNGNNANCGNNTNGTGGGAGNTTGNNNCNCN  
 TAGANCATNNNNNAAGNNANNNAAAAGGTTGCNGANACGTGCNAGNNTNNGGCGTCATACGCNNTC  
 40 GTAGGNCNNTNCTGGNTAGGAGNNNNNTNNNTAANNTGATCANTNCCGATCNNANGTANTNAAACNG  
 TNTNNNNNTGTGCCGANTCGNNNNGGCGTNNNGNGGATGCNCNANGGGNANNCTGNCTGNATGCTA  
 NNNTNNNTGTNNNANTCNGCNCNAGCNCCTNTCNCAGANCATGTNACNCTANCANTNATACATTGN  
 NATNTNAGACNNNAGCTATGGCGTNAGCNANCTANGCATCATNAGTCNTGACANNAATNTNAGNNACN  
 GNTGCNANNGCNGGNACTAGTCGNGTGCCTCCCCGNGCGCGNANANANTGTGGTNNNTTNTCTCTCTA  
 45 NNTCNGTATCGNCG

ANNATCTGGAGCTCCACCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGANTTC  
 GANCNCTTNTNTTTTGGAGCCTCTGACAAAGCCGCAATGTTTNNGACTAGAAATAATTACCCAGGGAT  
 50 GATCATGACGTACTAAATACCANGACAGAGNCTANGAACTCATTATGAAACCATTNACTCGCAATGGN  
 NNNTGCCNATCTGNNACACANGTCTGTCTNTTTCATTCTCANATTATTTGAATTCTTTCCAAATG  
 GCTGTNGAGNTTANATGGNGGTAGGGCTGTGAGCCATAAATCTGAAGCGTTGANAGCCTTGGGCCTGG  
 AGAGCCATGAANAGGGAAAGAAAAGANGGCNNGTCTCGAACTNAGCCAAGGACCNGATGGATTGCT  
 CGACCCAGACACAGAAGTGAAGCCTGTGTNCACGTGTGCCCCACAGACTGGAGTTTTTGGTGCTGAAT  
 55 ACAACANCGTGTGCTGAAAAACCANGGGTTNGGTGAATANAATGTTTTGATTGTGCTATGTAT  
 GTNCTACCAGTGTGTGGACCTTTGAAANATNATNNAGNTACCCCCGATTNNTNANACNAAAANAANN



NAAACTCCNTCTCTGGGGGGNGCCCCNGNNCCCTAATTCCGCCCTTTATANNNGNTNCCCCCNAC  
 NNTNCCCTATTTCTTGCTTNNCTCCTNNGNNNGCNNNTTATCATNTTCCGATTCATTACATTTATCTCN  
 GNNTGCTNCCCNCTNNNNNCCTNCCNTTTTNCGNCGNTNNTNCCCTNNGGCTNNTTTTCCNNA  
 NCCTNNNNTCTGCTNNTCTATCTNCCNGNNTCANTGNNTATCCNTTGCNCNTNCTGTNNAATNTCTN  
 5 TANCTTTANCTNGNCTTGCCATCNGGTCTNNTTNCNNCNTATCAGTTTNTTTTCGNNTATNCCNCC  
 TNNCTCGNTTTCNTNTGNANTATCTGTCTNGNCCNNTTTNCGTNANCATCTGCTCTNTTTGNGCANC

TNAGCCTATAGNGAGTNGTATTACAGTGGCGGCCCGCTCTAGAACTAGTGGGNTCCCCNGGCTNGNNG  
 10 GTTGANAAANNAGACANCATNTGNCCNCGCNCNNGNGGNNGGGGGGANNNGGNGNANGNNNGGCNC  
 TTNGNNGCGCAANGNNAGNNNAGNANNNNNGANGNAAAANCNNACNTTTTGNNCNNNGGANCNGA  
 TACANTTCTTAGGTGNACCCCTNTGTGGNCNGACCGGTGTTTCTCNACAGAGCTNNTGCCAGCTTANT  
 ANGCTGAACNCTGTCACTGCATGATNGGTGAANGTCNACGCTTNCGTCTNGAGANTGGTGACTCCGAG  
 CTANNAATTGCTGTCCNTCCGGGGAGCTCTNGGGAGTTCTNGNGCTNTNNNGAAANGGGCCCTATGAT  
 15 AGANGATNTGCATACTNCTCTCTGANCNCACTNNTGNCCCNTGCCACANANAGNTTTTTNTGAAACGT  
 GAGTGTATCANCCNCTNACCNNCTGTTCTNTCNTCAAAAATGCNNAGTTCCTNCAGNATTTTGGGCTACT  
 TTGATGCTCTTCGCCACNCNANNAGGNCCCNTGCAGNGGAGTGGNCACCCACNCNGGACNCAANTT  
 TTNTGCTANGGGTTTCATTGANCAAACCTTTGGAANGNGNNTGGCCNTGCANTTANTTCCNNACTGGGN  
 AAGANAAGGANAACTANCNTCCCCCTTTTNTGAAGANTGGNNNTTNNATATNNCTNCCGCCATTTGAA  
 20 CNTNCNATTTTNNGGNAAAAGGGACNGCAANGGNCAAANAATNNTTNTGTAANGTGGNNGNCCNC  
 GGNNNNNTAACANANNAAAAAATCTNGNCCNGNNTCNCNTNNNGGGGNGGGNCNNNNCCGNCCCATN  
 NTNTTGTTTTATGGGNCNCCTCTTTAAACCNCNANATTCNNAAGNCCNNGNCCNTTNCNCNTG  
 NCNCGGCNNNTTNTNCCCCCCCCCANTNAGTCCNAGATNNCTTTTTTCTCTCCCNANANTCGTGN  
 CNNCN

TNAGCCTATAGNGAGTNGTATTACAGTGGCGGCCCGCTCTAGAACTAGTGGGNTCCCCNGGCTNGNNG  
 GTTGANAAANNAGACANCATNTGNCCNCGCNCNNGNGGNNGGGGGGANNNGGNGNANGNNNGGCNC  
 TTNGNNGCGCAANGNNAGNNNAGNANNNNNGANGNAAAANCNNACNTTTTGNNCNNNGGANCNGA  
 30 TACANTTCTTAGGTGNACCCCTNTGTGGNCNGACCGGTGTTTCTCNACAGAGCTNNTGCCAGCTTANT  
 ANGCTGAACNCTGTCACTGCATGATNGGTGAANGTCNACGCTTNCGTCTNGAGANTGGTGACTCCGAG  
 CTANNAATTGCTGTCCNTCCGGGGAGCTCTNGGGAGTTCTNGNGCTNTNNNGAAANGGGCCCTATGAT  
 AGANGATNTGCATACTNCTCTCTGANCNCACTNNTGNCCCNTGCCACANANAGNTTTTTNTGAAACGT  
 GAGTGTATCANCCNCTNACCNNCTGTTCTNTCNTCAAAAATGCNNAGTTCCTNCAGNATTTTGGGCTACT  
 35 TTGATGCTCTTCGCCACNCNANNAGGNCCCNTGCAGNGGAGTGGNCACCCACNCNGGACNCAANTT  
 TTNTGCTANGGGTTTCATTGANCAAACCTTTGGAANGNGNNTGGCCNTGCANTTANTTCCNNACTGGGN  
 AAGANAAGGANAACTANCNTCCCCCTTTTNTGAAGANTGGNNNTTNNATATNNCTNCCGCCATTTGAA  
 CNTNCNATTTTNNGGNAAAAGGGACNGCAANGGNCAAANAATNNTTNTGTAANGTGGNNGNCCNC  
 GGNNNNNTAACANANNAAAAAATCTNGNCCNGNNTCNCNTNNNGGGGNGGGNCNNNNCCGNCCCATN  
 40 NTNTTGTTTTATGGGNCNCCTCTTTAAACCNCNANATTCNNAAGNCCNNGNCCNTTNCNCNTG  
 NCNCGGCNNNTTNTNCCCCCCCCCANTNAGTCCNAGATNNCTTTTTTCTCTCCCNANANTCGTGN  
 CNNCN

TTGAAAACATCTGGAGCTCCACCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 AATTCGNCANGATGCNTTTCGNTACCGNCNNACTGGANGGNNNACNNNGNCAAGNNNCCTTCTNTATA  
 NTGNTTNTANTAAAGGNNTANATGAGTNCCTTNNCNTNATATACCTCAGNGTACACNCTNNACTCCC  
 AGACATNTNACTTCTGCGTTTNTCNCNTTGAANTATNTGCTATTNGCTTTCGAANTTATGCTACGACN  
 TANNAACAGACNANCTGCACTNNTTTATNTNACAAACCNNATCCGNGNNNTATCNTGCNTTTNNNG  
 50 GNTTACATNCANCNGCCTCTTTATATTCTGNCCCTCACACTGCANNNGNTNNANNTCTTGANACTGGNC  
 GGCNCNTATNTGNANGCTCTGGAANGNNCNCNNCNCNATCAAATNANATCCCTNNTANTCCNAA  
 GNNTTNTCCTTNNAAACNATAGCACNCCNTTTNCCGNTGGAAGTTNTNGAAAAAAATTNCCCTNC  
 NNNAGNTNTTANAACCTTNTNCNAAATTTNNTGGNTNTNGNTTNNAAATTNNNAACCNCCTTTAATTA  
 CNNGNTNTCTANATTNNACCGNGNTTTTNTAAACCATTTTGANTNTCTTNTGGTTAAATTCCTTT  
 55 NTCCGNAAAACNCCCTTTTNTAAANTNAANTGGNNNANTTTCTTNAANNAAAAACAAANNTTNTNTT  
 TTTTNGGGGGGNNNNCNCNCCNAAACCANACNTCTNNAANTTTTTTNTCTTNAACNAAANAATTCNT



TTTNTTNNCTNNTATNTNNTTTNTTNANTTTAAATTTNCCNNTNTTTTNCNCTTTTNTATTCTNCTTNAN  
CTNAATATGTNCTCNCNCTCNCNTTATCNTNNCNCCNATTTTNNNTCTCCCTNTTNTCTTNCNCTATA  
NNTTNTNNGNCTCTGTCNTTANTNTNANTNTTCTTTNNCANGCTTTTTTNTCTCANTCTNATCTNCCCNC  
NNACTNATCTTTNANNCNATNNNNNCTCT

5

TTGAGCCTATNNGGAGCNCGCATNNCNGNGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
GGAGNTAAGGCTGAGAAGNCNGATACTAANNNGAAAAANCCTGTGCCANGANGGCTGANNCTGGCN  
AGAAGGCTAAANAGGTGGAAANGGTGACNAANGTTANGAAGGGNAAGCCCCACTGCAGCCGAAATC  
10 CTGTCCTGGTCAGAGGAATTGNCAGATATTCCCGATCAGCCATGTACTCCAGAAAGGCCTTGTACAAG  
AGAAAGTNTTCAGCAGCTAAANCCAAGGTGCGAAAAGAAAAAGAAGGTTTCGTGTTCTTGCTACTGTCA  
AAAACCAGTTGGTGGAGACAAGAATGGTGNACCCGAGTGGTCAACTTCGCAAANTGCCTAGGTATTA  
CCCTACTGGAAGATGTGCCTCGAAACCTGTTGAGTCATGCAAAAAACCCTTCAGTAAGCATGTGAGGA  
AGCTGCGTGCCAGCATTCACTCCTGGGACCATCCTGATATTCTACTTGGGCGCCACAAANGCAAGAN  
15 GGTGCGNTTTCCTTNAANCAGCTGGGCAGNGGCTTGGTTACTTGGGACTGGGNCCTTTATCCCTCAATCG  
AGTTCTTTGNGGANAACACACCANAATAATGNTATTTGCCNCCTNACCCAAAAATCGNTTTTCAGGN  
GGGGGNGNAAAATNCCCANAAATTTTACTTGANCCTTTACTTTAAANAAAAAANAACCTGGGTT  
NAAACCCCANACCCCNCGGNGGGCGGANATNNTTCGACCCCGGGGNGNGNGGGNAANTTTCCCGG  
GATTTCCCNCGGCCNCGNCCANGGGTNCANTCCAAAAAAGCTTGGGGGGCCTNCAAAAAATNTN  
20 GNGGAANNAANAANAACGNTTTCCTTAAANGTTCCANGGGGNTTCCCTTCCCTNCCGGGGTTN  
GCTTTCCCCCAAAGGGGAANTTTTTTCTCNCCAAAAGGAGGGNGTNN

20

TTNANNACAANCTGGAGCTCCACCGCGGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
GGCCAGATTTCTTTTCTGTTTTTGGATTGCTGGCAGCTTAAGGGCCAAAGAGGGTGGTCATAGTGTTA  
GTTGCTCAGTGGTGATGGACAGGGAAGCCTGGTGTACTGCAGTCCATGGGGTCACAAAGAATCAGAC  
ACAACTGAACCTCAATTGAACGTGTGCTCTTTACAACCTGATAGACTGTAGCCCACCATGCTCCTCTGGC  
CCTGAAATTTCTCCAGGTAAGAATACTGGAGTGGGTTGCCATTTCTTCTCCAGAGGATCTCCTGACCC  
AGGGATCAAAACCCAGGTCTCCCTCATTGCAGGCAGATTCTTTACCATCTGAGCCACAAGGGAAGCCCA  
30 AATGGTTGGCAGGCAGGCTGAAAACACCACAGACATTTCTTGAGTTTATGTGCCTTTTAGTGTAAG  
GGTCAGAGGAAAGAGAGTCATTTTGAGAGAGCAAAATGACTTTTTCTTTTTATCTTCTACTCTCTTCC  
TGAAGTGCCATTTGAGACTGCAGTAAGGTAAGGGAAGAATGCTTTCTTTCATGAAAAGAGGCAGGG  
GATCAAATTGATGTGTAACCTTGGCCTAATGAAGGACTCCCACGCCGATTGTGGNTGACTTGCCTGCCT  
GCACANGTGGTGGAGGNAACGATGTGGTTTAAACCGNGGTGAACTCTGATAATAANCGGCTGGANCCG  
35 AAATCCCGCCGGGAAAGCCTGGGTCTNCCTCTAACCTTAATTTGGGGGCCTCCCANAACTGGNCCAGG  
NAATTGGGCTTCNCGCCGGGTCAAAAAGNACCGNGANCCAAAAACTTTTGAANGGGTTTGAAGAAA  
CCTTTTGGNCCAAACCTTGNAAGGGGANGGCCCTTCCCCAAAANCCTTGTTGNAACCCNCCAAGGG  
AAANCCANGGN

40

TTGANCANAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
GAAGAACTCTGATGCAGAGGTTGCACCTTTTCCAGATGAAGATATACCAGNAGATATTCTTAAGAAT  
TTAACAGAAGAGCTTCTCAACCACGAAAAGTGCCAGACGTCTAGATGAGTACACACAAGAAGAAA  
TAGAGGCTTTCCCAAGAGTTTGGTCTCCACCTGAGGATTATCGGCTGTAGGAGGAAGAAAATTTTACA  
45 AAATAACGGTGTGGTGCTTGAAGTCTTCTCAGGGCAGGATGAAGCAATAGCTGCCTTCTGGAAGG  
AAGCCTGCTCTGGGGGCTGAAAGTTTGTGGGGAAAGGTGCGGAAGGGGTATCCCTTCATTAGGAAAT  
GCAGTANGATGTCATTTTATAGAATTGNTTTATTGTATAGTGCTATTTGAATGTGGAAATGATAAGAA  
TAAAACTGCGCTTACTTCAAAAAAATAAAAAAATAAAAAAATAAAAAAATAAAAAAATAAAAAAATA  
TCCTTNTANGGAGNTNNTANNNANNNNNNGGAANGNAAAGANTGCTTTNNTTNTTGANNNNCNGC  
CTGGGNTNAANTNNNNCNTNNNTTGNCTNNGGANNGACNNCCNCCNNTTGGGGTTGNCTNGCCT  
50 TNCNCCCTNNNNNGNGGNGGAACCATGGNCNNNCCNNGNNNNNCNNTNGNNNNNNNNNGNNNGGCC  
CNNNANNCNNGGNNNNNCNNNNNNNNNCNNNANNNNAATTNGNNNGNNNNNNNNNNNNNNNCNN  
NNNNNNNGNNNTNNNCCNNNNNNCNNNNNNNNNCNNNNNCNNNNNTTTNNNGGGGNNNNNNNNNN  
NNNNNNNNNNNNNTTNNNNNNNNNNNGNCCCCCCCC

55



GNCTNAAGCACTTTATNCAANCTCTCTGGGGCTGTGGNTATGCNTNTCATNATTGGTATTACGNCCCG  
 NTCTTGCNCCTTNNGNTTNCCTNGTANANNACCTACCAGGNNNGGAAGACNAGTCNGNATTAGNTN  
 GNTTCNGGTNGGNAATCENNTGATATTTTNNNTNGGNNNAAGGGCGTCCTCCCNCAATTTTGTNTNTT  
 NANNACTACTNGAGNACNNCTNTAACTNNTTATTTTTTAAATTTCCNTCTTNTNCAACCCTTGCNTT  
 5 GGNCAGCCCTTNCNTCTANTNTNTNATTNCTTTTTNTTGGATCCTCANNTTNTTTTNNCNATATNTG  
 CNNGNCCNCTTCTTCTNTNNANCTNGCCANTNNNTTNTCTTTTNGNNTNANTNCGTTNACNCCCTCT  
 NNNNATATTNCTNAAANGGGGNTNNNGGTTNGNNTTNTTTTATTTATANANGNNTCNGNGNNTTNTAN  
 NTANNNCCCNANNNNTCNATAAGAATCCNNNTGATCTNTCAGNNANCTCTCGTTTCCTCTTNGNNTNN  
 CCCCNAATAGTNNNTNATNCNATNTAGNGNCNNGNANCATTGTCNCTTNNNGTNTCTNAGTCCNTC  
 10 AACNATGATNGTCTCNNGGNNNATTTNTATCTNTCCCTNTNANAATTANNNTAGNAGATNCNNNTNT  
 CGNNNCACNTAATAACTNGATGTNGCTCCTAGGATTTCTNCTTTGNGCNCTNCG

TTGAGNCCTTNTAGTGNNGTCTGANTTACAGTGGNGGCCGCTCTAGAACTAGTGGATCCCCGGGCTG  
 15 NAGGAAATTCGGCACGAGGAATNNNTNTATCTGTGATGGTGGCNGGAAGACCGNGNNTGTCTTGCCA  
 NAATGNNTTANATANANCAAANNTGTNNCTGCNCNTACANGNNAATACNTANCTTNTGGGCCNAGGG  
 GGAGTGATNCGNGNNGAANTCNCNCTTGCNCANCTTANTGATCANGTGCNANNCACNNNTTANNAG  
 NCCATGATCNTCCTGNCCGGGACTCNGGTGGATNNNANGNCNNNTGAGGCCANCGANNNGANAGCN  
 GNCTNAAGCACTTTATNCAANCTCTCTGGGGCTGTGGNTATGCNTNTCATNATTGGTATTACGNCCCG  
 20 NTCTTGCNCCTTNNGNTTNCCTNGTANANNACCTACCAGGNNNGGAAGACNAGTCNGNATTAGNTN  
 GNTTCNGGTNGGNAATCENNTGATATTTTNNNTNGGNNNAAGGGCGTCCTCCCNCAATTTTGTNTNTT  
 NANNACTACTNGAGNACNNCTNTAACTNNTTATTTTTTAAATTTCCNTCTTNTNCAACCCTTGCNTT  
 GGNCAGCCCTTNCNTCTANTNTNTNATTNCTTTTTNTTGGATCCTCANNTTNTTTTNNCNATATNTG  
 CNNGNCCNCTTCTTCTNTNNANCTNGCCANTNNNTTNTCTTTTNGNNTNANTNCGTTNACNCCCTCT  
 25 NNNNATATTNCTNAAANGGGGNTNNNGGTTNGNNTTNTTTTATTTATANANGNNTCNGNGNNTTNTAN  
 NTANNNCCCNANNNNTCNATAAGAATCCNNNTGATCTNTCAGNNANCTCTCGTTTCCTCTTNGNNTNN  
 CCCCNAATAGTNNNTNATNCNATNTAGNGNCNNGNANCATTGTCNCTTNNNGTNTCTNAGTCCNTC  
 AACNATGATNGTCTCNNGGNNNATTTNTATCTNTCCCTNTNANAATTANNNTAGNAGATNCNNNTNT  
 30 CGNNNCACNTAATAACTNGATGTNGCTCCTAGGATTTCTNCTTTGNGCNCTNCG

TTNAAAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGG  
 AATTCGGCACGAGGGCGGCGCCAGAGCCGNTCNGCGGTNNACTGCCAGAGTCCGCGGCCGNG  
 CGCCCCGAGAAGCCAAGCANCCATGGCCTATCACAGNTTCTTGGTGGAGCCCATCAGCTGCCACGCT  
 35 GGAACAAGGACCGCACCCAGATCGNTATCTGCCCAACAACACGAGGTGCACATNTATGANAAGAG  
 CGGGAACAAGTGGGTCCAGGTGCACGAACTCAAGGAGCACAACGGGCAGGTGACAGGCATTGACTGG  
 GCCCCAGATAGTAACCGTATCGTGACCTGTGGCACAGACCGCAACGCCTACGTNTGGACNCTGAAGGG  
 CCGCACGTGGAAGCCACGCTTGTATCCTGCGCATCAACCGCGCGCTTCGNTGTGTGCGCTGGGCCC  
 CCAATGANAAAAAGTTTCGNTGTGGGCAGTGGCTTCCCGTGTNATCTCCATCTGNTATTTNAGCAGGA  
 40 AAATGACTGGNGGGNGNGCAAGCACATNAAAGAAAGCCCATTCGGTTCACCGTCCTAAGCTTGGACTT  
 GGCACCCCAACAGNGTGCTTCCTGGCCGCGGNTTCTGNNANTTNAATGCCGGATNTTTTACGCTA  
 CATTAAAGGAGGNGGGNGGAGNGGCCAGACCCCAACCCGNGGGGGTTCCAAAAAGCCGTTCGGGGA  
 ACTTGATGNTTCAAATNCCAACAATAACCTTGCGGTGGGGNGCATGGGGNTTTGGTTTTTTNGGCCA  
 AACGGGAANTNTGTAANCCTTGGGGTNAACNCCAAAAAGNACCCNGGGGGCCTTGGGTTTGATGC  
 45 TTGAANAAAAAAGGGCCGNNNGNAAANTTTTGGCCTTTTGAAAACCTTTNCCGTGTTGTTGGCC  
 GGTAACCTTTTTTTAAANGGGGAAGGAGNT

TTNAANCNCNATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCA  
 50 GGAATTCGGCACGAGGGTTTTATAAATTTAATATATTTATCAAGCCAAATGTGCAGATGCTAACTGGA  
 CGCTCTGGAGAAGTGGGCCCAGGGACGCCNACCCTGTTCTCTNTTCAGCAGTGGGAAGGCCACATAT  
 TTCAGTGGCCACAGCCACAGGAAGCTCAGATTCTCTGGCTAAAGGTAACACTTTGCCCTCCTGTGCTCC  
 TCTTANCTTCCCGCCACCCCCAGGTAGGGGGCGAGAATGGCACTGGAAAGGCCTGGCCCTAAAGTATA  
 GTTCTTANAGCAAGGGGAGCTTANACCTCAGGCGCCCCCAGGGAGGCCTTGAGACTGGGCAGAAGGG  
 55 TTCTGGTTGCTAGAGCCTGTGTGCAAAGGGGTGCCAGCAGCCCCCTGAGCTAGTGCTGGGAGGACTA  
 ATGGTGGGGGGGGGGGCTGNTACTCCCTNAGTCCCTCCTCCNTGTTGACATNTGGGGCTTTGACC

CTTTNTTTTTTAATCTACTTTTGCTAAAAAGCNTTTAATAATAATAATAANGGGACAAAATGCAAACCT  
TGTTTCCTCNCCTTTTGGGCTTNTNGGAATGTCATCACCTCCANTTTGTTGGGTTTGTTCACCTTGTT  
AATAAAGCCTTTGAAACCGTNAAAAAAAAAAAAAAAAACCTTGNGGGGGGGGGCCCCGGANCCCA  
AATTNCCCCCTTAAANGGAGGNNNNAAAAAAAAANNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
5 NNN  
NN  
NN  
NAAAAANNNGNNNN

TTNANAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGG  
TGAANACCACCGNTNNNNCTAAGCCANAATGGGAAAGGNGAANACCCNNATCCANATCNCNTGTCATT  
GGGCACGTAGATTTCANGGAAGTCTACCACGACTGGCCATCTGATCTACAAATGTGGCGGGATCGACAT  
AGAGAACAATTGAAAAGTTCGAGAAGGAGGCTGCCGAGATGGGAAAGGGCTCCTTCAAAATATGCCTG  
GGTCTTGGACAACTTAAAGCTGAACGTGAGCGTGGTATCACCATTGATATCTCCCTGNGNAAATTTG  
15 AGACCANCAAGNACTATGTTACCATCATTGATGCCCCAGGACACAGAGACTTNATCAAAAACATGATT  
ACANGCACATCCCAGGCTGACTGTGCTGTCTGATCGTTGCTGCTGGTGTAGGAGAATTTGAAGCCNN  
NNTCTCCAAGAACGGGCANACCCGTGAGCATGCCCTTTNGGCTTACACCNTGGGTGNGAAACAATAA  
TTGTTGGCGGTAACNAAATGGATTNCACTGAGCCACCCTATAGCCAGAAGAGATCCCATGANATTGTT  
AANGAAGTCAGCACCTATATTAAGAAAAATTGGGCTCANCCCCGACACAGTAGCATTTGTGCCAATTT  
20 CTGGGTGGGAATTGTGCCAACCATGCTAGAAACCAAGTGCTAATATGCCATGGGTCAAGGGGATGGA  
AAGTCACCCGTNANGGACCGGCNATGCCAGTGGGAACCCACCCCTGCTTGAAGCTTNTGGAATGGANT  
TNTGGCCANCCAACCTTGGNCCAAATTGAAAAAACCTTGCGTTTTGCCTTTTNCANGGAAGGGCTAAT  
AAAAAATTGGGGGGGATTGGGACCTGGGCCCTTGGGGGTCCGGGGGGGGGAAAANTGGGTGTTTTTC  
NAAACCTNGGNGTNGGGGGG

ANAACCGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGAAT  
TNGATACNAGGNNNTNGATNCNNATTGNNTGGNAGGAGACACCCNNNCTTNTTCATGNNCATCTNN  
NTNNGAGTNNCTCNGTCCATTCTTGCTNCCGCATGCCTCTACTTTGACTGACATTCTGTGTNGNAAAN  
30 NTGNNCAACCACTGTGGGGANCANCCCTACTGANGGAANANTGNTATANGNCNATNCCATAACCTTA  
NTGACNNGGNTTATNNATCNCCAANNCTACTTGGGTATGGNAGTNGACTAGATGTNTNNTAACTTNTG  
AGTATNTTTTATTNGANGCTTGGCTNACATATAGACTTAAACTGTCAGCTTGGANNNGTCTATTNCTTA  
AACTTTGNAANATATATATATATTCTTGNTCTTCCATTGAATGCAAATTGATAGACAAAGATGTACNAT  
TGCTCTGTTGTNTGTTNGGATTATGAACGAAATGGTTGTGACCAATTTGGNGGAAGGGACACACACCA  
35 ANTCTGGGGATGGNTATGTNTANNNTNCTTGGCATTGGCNTAAATNNTTGANAGTTCCCNTTCCCATT  
NACACTCCCATNATGCTTTAAANNAAAAAAAAAAAAAAAAANANNTNNGGNGGGGGGGGGCCCCCTGACCC  
CANATTTTGGACTTTTNTTGGAGNGCTTGTTTTAANAANTTGGNGNAAANTNTNNTNTNNTTCTTTTTT  
GGGNGGAANCCCNCTTCCCTTTTNTTCCGNTNTNAAATTTTNTGANCNTNAAAGGGNGACAAAGA  
NNAAAACNCCNNNTNTTNNGTTTTTNTTTTTTCCNCCNCCCCNCTNNNNNTNTTNNCNTTTTNNC  
40 ANNGGNNNTTTTGGGNTTTTTTTTNNAGNNNTTNNNNAAATNTNNTNTTCTCTNCNAAANAATCNC  
NGNTNNNTTTTTTCTCTNCNNGAAAANAANANT

AAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGGGAGG  
GCNCGAAATTTGAGGTGATGAACTCCTTCGAACTGCTGTCCACACCGTGGAAGAGAAGATTATCATT  
GACAAGGAATATTATTACACCAAGGAGGAGCAGTTTAAACAGGTATTCAAGGAGCTGGAGTTTCTGG  
GTTGGTATACCACAGGGGGGGCCGCTGACCCCTCCGACATCCACGTCCATAAGCAGGTGTGCGAGATA  
ATTGAGAGCCCTCTGTTTCTTAAGTTGAACCCTATGACCAAGCACACAGATCTTCTGTGACGCTCTTT  
GAGTCGTCATAGATAAATCAATGGAGAGGCCACCATGCTGTTTGTGAGCTGACCTACACTCTGGC  
50 CACAGAGGAAGCGGAACGCATTGGGGTGGACCAGTAGCCCGAATGACAGCAACAGGCAGTGGAGA  
GAACTCCACTGGTAAGGGTGGCTGCAGGGGCTTCCCTGGAAGTGGGGGGNGGNGNNNNNNNNNNNN  
NN  
NN  
NN  
55 NNN  
NN



GCCTATAGTGAGTCGTATTNCAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGCCTGCAGGANTT  
 CGGNACGAGGAACCNCTTTATCNGTGATGGTGNNGGANAACCNNGANGGTCTNCCCANAAAGGGNTA  
 GAANTANCNAACTNGNGGTTGTNCGACCCTTGATTCNAAACNNTTNGGNNNAGGGGGNANNNNACG  
 ANANGNAANNCCNACTNNNNANTTTNATGNTNAANTNCCAAACNCCNANTCNNAAACCCANAATCTT  
 5 CTNCGNNGGAANTCGGNGGGCCNAATGAANGGNGNNCCCCTTNACCGNGAANGGTTAACACACTTAT  
 ATCCAANCCCCCTTCGNGGTGTGNGGAGAGCAAANANNGANATGTGNTGACACNCCCACGTGNTATCG  
 CGCGCNCATATATGTGCACGANACGANNCCATGTGAGAAANTTTGGTTTTNGAAAAGCGANNGAGA  
 CNCNGTNGCTCTTATNAAAGGGGGGACNCNCNNNTGTGNTTTTTTACACAAAAANTCTCACTCTACNN  
 CCTTTTTATAATATGGCCCCCNACCTGGTTTTGNNAACCTACTANGGTCAANNGTNTTTNNTANTGGTG  
 10 CGGCCNACCTTCTTCGNCNTTATACTANCTTNNGACCTNTTGTGAGACCCCNAAATNGGTTNATTCC  
 TNGGNGAANAAGCANNCTNCTGNTAATTATTCCTNCGAAGGATGGGTNCNTCTTGTTANNCCCANC  
 CAAAAAAAATTTGGGGTGGGNTTTCTTGGGACCNCACNNANGGAAANAATGANGTTNCNTTNNTGA  
 CCTTCTTTTNTTCTTNNTGCCTNCCGGAAGCTTNATTAACCTTTTTTTNTGGGGNACGNAGNTTAATCAA  
 CCNTTNNNNGNCNCNGATTCTNNTTTATGGAGGGAAAAAATTCNTTNNTTAAACCCCTNCCCNNNCN  
 15 TNTGTTTTGCACAAAATNNTTNTGCNGGCGGTNTTNCCTTTNNNNCGGGCCTTN

TTNANNAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 ATTTTAATTGACATCTCACAGAGGTCCAGAGACATANAAAGACTTAACCAAAGTTAGGGTTGGAATTA  
 20 GAGAAGCCAAATACCTTTTTTAATCAAGATGATTCTGAATATTTTTATGCTGATAAGGAANCAGTAAA  
 AGTGATTATTAATTTTTTTCTCTTAAAGTTTGGATCCTGGATGCAGTTGGAGGACAAGAAAACCTGC  
 TCTTTCACTGTGATCACNGTNGNNTACAAATGATTGTAGCTGATAAAATTTTCNGATGTTGGGTTNCCTC  
 CACACANACTTTNCCAGACTGTCCTTNACATTATAAGACGACTTCTTTCCAACCTTCCTTACATTTGGGA  
 ACTTTAGATTNATAGGGTATTGGGTNCTTAGTCTTAAAGCCTGGAGAACNATAAAAGAAATTCCTTA  
 25 AAATTTTAACCTGGTTTCCTAAGTAACAGGANCGGAGTTCCTTGGAACAAGAAAGGCCNATNCCANT  
 AGATGAAGNGTTTTTTTACAGGTNTAATAAAAAAGTTNCCATGGTTAAAGGGAACCAAAACCGGACCG  
 ATAAGANAANAGTTTTAANATTTGGCCGATAAGAATTTGGAAAAATGAATGGCCNTTGAAGAAGAN  
 AATGGTTACCTTGGNAAGGATGACCTTGGNTTTGGTTGGCANCNTGGAAAAAAAAGCAAANGGAN  
 CTTAGGGNTGACCTCAAAANATGAAGGATTCCNAAATATGACCANCCTTGNTAANTTGGGAAGNAGG  
 30 ANGAAANTTTCCCTTAGGAAANNTTGAAAGGAAAAATTTNCCTTNAAATTTGAAGGAAANAAGGGGG  
 GAACCNTTTNNNGGGGGGGGNNNNNNNGANNNAAAAAANGNNGGGCCTTTTCCCNAAANNTNNNN  
 NGGGGGGGG

TTNAAAAANCTGGACTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
 TCGGCACGAGGAGGAGAAGGGCACCCTGAGGAGGTCTGCCGCATCTACCTGAGGCGCATTCTCCAC  
 ACCTACTACAAGTTTGATTACAAGGCCCATCAGCGGCAGCTTACGCCCCCTGAGGGCTCCTCAAAGTC  
 TGAGCAAGATCAGGCCGAAAATGAGGGTGAGGACTCAGCTGTGCTGATGGAGAGACTGTGCAAGTAC  
 ATCTATGCCAAGGACCGCACAGACCGAATCCGCACGTGTGCCATCCTCTGCCATATCTACCATCACGC  
 40 CCTGCACTCCCGCTGGTACCAGGCCCGGGACCTCATGCTCATGAGCCACTTGCAAGACAACATTCAGC  
 ATGCANACCCACCAAGTCCAGATCCTGTACAACCGCACCATGGTGCAGCTGGGCATCTGTGCCITCCGC  
 CAAGGCCTGACCAAGGACGCGCACACGCCCTGNTGGACATCCAGTCAAGCGGCCGGGCCAAGGAGC  
 TTTTGGGCCANGGTCTGCTGNTGCGCAACCTGCAGGAGCGCAACCAGGANACAGGAAAAGGTGGAGCG  
 GCCCCGGCAGGTGCCCTTCCACCTGCACATAAATCTGGAACCTGGTTGGAATGNGTTTACCTGGNGTNA  
 45 GCCATTGNTCTGGGGANATCCCTTACTTGGNCCCCCACAAGTGAACCCCCCNACCATGATCAA  
 GCAAGCCANTTNCATTACCCANTTNGGGGTGGGCCAAACCGGAAACCCNTTTNTTGGNCCCCCTTGA  
 TTCCATGAAGGGAACATGGGGGTGGTTGCCTTTTAAAGGCCCTTTAAAAATGGGCCNAATNGGAAAAA  
 CCTTGCCCCAAATTTTTTTTTNTTCATTGGGAAAAAATAATGGGGCAAAAAGGGNGGGGAACCN  
 50 TTTTCCCGGGNG

NACAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCGCCCGGGCTGCAGGCTG  
 GTGATTCTTAATGATTTGAAGTCCATTGCTTGGGAGGAAATTCACCACACATTTCATGCTTATAATAAG  
 CTGGGGATTTTTGTTTGTGTTTTCGAAATGCTTGCCCTACTTTGCAACGATTTTCTGTTTCGTAATTCTGA  
 55 AGAACCAAGGTGGGGAGCAACACAACCTGATGGAATAGTGGTATAAGTTTATACCAGAAGCTTAATGA  
 CAAGTTTTATCAATCAGAATAATACTTGGTTATGGAAGTGAAGTATGCTAAATAAATTCAGTATTTT









AAAGTGGACATCGTCGCCATCAATGACCCCTTCATTGACCTTCACTACATGGTCTACATGTTCCAGTAT  
GATTCACCCACGGCAAGTTCAACGGCACAGTCAAGGCAGAGAACGGGAAGCTCGTCATCAATGGAA  
AGGCCATCACCATCTTCCAGGAGCGAGATCCTGCCAACATCAAGTGGGGTGATGCTGGTGCTGAGTAT  
GTGGTGGAGTCCACTGGGGTCTTCACTACCATGGAGAAGGCTGGGGCTCACTTGAAGGGTGGCGCCAA  
5 GAGGGTCATCATCTCTGCACCTTCTGCCGATGCCCCCATGTTTGTGATGGGCGTGAACCACGAGAAGT  
ATAACAACACCCCTCNAGATTGTGAGCAATGCCTCCTGCACCACCAACTGCTTGGCCCCCTGGCCAAG  
GTCATCCATGACCACTTTGGCATCGTGGAGGGACTTATGACCACTGTCCACGCCATCACTGNACCCCA  
AAAAACTGNGGATGGCCCCCTCCGGGAAGCTGTGGCGTGACNGCCGAAGGGCTTGCCCAAAATATNAT  
CCCTTGCTTNTACTGGCCCTTGCCAAGNCCGNGGGCAANGNCCNTNCCTTGACTTAAANGGGAAACT  
10 TAANTGGCATGGGCCTTTCCGGGTNCCCAATTNCCAAANNNGGTTTGGTTGGGGGATTTGACCCGGCCC  
NCCTGGGNAAAACCCTGCCCAAGTTTAA

CCTATCTGGAGCTCCACCGCNGTGGCGGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTC  
15 GGCACGAGGGTGAAAATTAAAGCTAATACTTGCTTAAGTGCTTATTATGTGCCAGGCACTGTCTTTAT  
AAAATTTGACTCATTCAGTGAAAAATATATTATTTCTAAGTGTTGTGTGTGTTCTCTGAGGAGGAGGAG  
GAACAGAGAGAAGGTAAGGCTGGAATCAAAGGTTGGTGCTTCAAGAAAATGACTTCTAAATCGGTGT  
TTTTCTCATCTTAAATTGGTGACTGTATTCCTGCCATCTATACATTAGAGAGACTGAGTTAACATGACTTC  
CTGTTCACTGTGGGTTTCAATGTCGTCAGCAGAGAGCATGCAGTTTGGGCTCCGACTGTACACCTGGGGTT  
20 ACTGGTCTCGGGGAAGTGGTGTGAAACAGAATTCATACCAGGGAGCCCTATAATAACCATATCGGGCA  
CTTAACCACATGCCAGGCATCCTAGTGAGTGCTTCACATGCGATACTTTGTTCAACCTTTTGACTGCCC  
TTTGAGAATGGGAATCTTCCAGCCCCAGGCTCAGGTGAGGAAAAGGAAGTCACTGACACGACCAAGG  
ACTTCCTCCTCATAAGGTGGGGAGAGGACCCCTTAGCCCCCAGGACACTGATGGACTTGCTTTCCCTT  
TCCCAGACTGCTTTCTTCGAGGAAGTGTGCTCTGTGATCCAGGAGCAGGCTGCAGCCCTGGGCTG  
25 GNCATGTTTTCTTTCTTGNGCCGACGCTTCACCTACTTACTGGAANGAGTCGGCCAAAGCTTNACTT  
GTCTNTCCTGAGGGGAGANGGAGGATCAANGATGACCTTCAAGGNGTCTTNTCTTTGTCCCGGANCC  
TGNAAGGAACTGCTCCCCANNGNGAANGNNTNGCCAAAACTGGATGCTCGGGCTACCCAAACCCTG  
GAACCCTCCCCTACCTTCTGGGACTGCCCTACANGG

TTGAGNCNATNTGGAGCTNCANCNCAAGTGGCGGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
AATTCNGCACGAGGATGNCNNCTACGNNNCCCAAGGANCTTGCTCTNGCTGTGGGNCTGAATAACANN  
TTATTCCTGCANAAAGCGGGCANNGCTTGACTNCANTCNCAAGATAACACGNGCGCNCACCTGNCTGA  
30 TINTNGANACCGACCTCTGANTTAAGACTGNCGCCACANCNACNTGGNTTNCNTGGCNCNTCCNCTN  
GCTCCTCAANANNANCCNTTCTGNCAANATCCTNGTANTTNGAATTCAACTCNAANGGNATTGNTN  
GACNCCNTTTNCNATCTCAGACTTTGNTTTTNAATGGCNCNNNTATCCACTGANNATANTATTNCCCTA  
CCTCNCNTTAAACNTGAATATATATNTCNCCTGTCCNGNTATTNTTCTCCTCNCCTGATCTAAANACNAT  
NCNTNCCGATGCNTAAATGTCNNTCCTCATGCTNNNANACCTNGNTTNTATNGGAACNAATNTTTNTN  
GTNATNTCCNAGNNTTNCNNNNNTCACTTNTNAATNGAANNCTNTACTNNNTTNTNTTTCNTTAATA  
40 GGGAAANNAANGCATGNNNNTTTAAACTTAATTCCGGNNANNCTTCCNNNNNAATCACCTAATCTNGA  
ANTGNNACAAGTACNCTAGAANGCTNGGGCANAATTTANATNCCCAANACANTTGGNGCTCTAACCA  
CNNCANGTCAAGGNNCATTANNCNCNCTAAATGNACTTACTNNGNCCAANGAGTCNNNNNNNCANCT  
NTACNGNATNACAAGATNNTNGNCCNGTGNNNCNTTNCNNANCNTGNGNNTNTNTTGGGTCATNCA  
ANACTCNANGCGTCTCTTCTACCTCTNGCTNTTCCCTTCNNNATCTGNTNCANNCANTNATCCCTANTN  
45 CNNNGNTNNTCTTTTTTTTTTGNANATAAACCGGAAGTNTCTAGTTNCACCTCNCNNTTNCNAANTAA  
ANNTTTCANTAACTCTCNTTTCANCTCANNGNNTTTNNGCNACNTCNTGTCNACNCNTATTATTCCC  
NNTNCNCNAGTTTTCNNTCCN

GCCCTATANNGAGNCGNATNACAGTGGCGGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAA  
TTCGGCACGAGGGTCATGTTGAGCCTGGAGTTTGATTACATGTGCCAATATGACTATGTTGAGGTCCGT  
GACGGGGACAGCAGCGACAGCCAGATCATCAAGCGTTTCTGTGGCAATGAGCGGCCAGCTCCCATCC  
GAAGCACGGGCTCCTCACTCCACATCCTCTTCCACTCAGATGGCTCCAAGAACTTCGATGGCTTCCATG  
CCATCTTTGAGGAGATCACAGCGNGTTTCTCGNCCCCCTTGTTTCCACGATGGCACTTGCTTCTTGACA  
50 GCACCGGATCTTACAAGTGTGCTGCTGGCGGGCTACACCGGGAAGCACTGTGAAAATCTNCTTGAA  
GAAAGAAACTGCTCANACCCTGGGGGGCCAGTCAATGGGTACAAGAAAATTACAGGAGGCCCTGGGC

TTATCCATGGGCACTATGCAAAAATCGGCACCGNCCTGACCTTCTTTTGTAACAGCTCCTATGTTCTCA  
GTGGTAATGAGATGAGAACTTGCCACCATAATGNANAGTGGTCNNGGAAACAAGNCCNATCTNGNAT  
AAAAGCCTGCCGNGNAACCAAAGAATCTNCAGACCTGGGTGGAGACNGAAAAGTTCTTTCCAANTGCC  
AGGTTCACTCCAAGGGGAGAACNNCNTTTACAATCAGNNTNTTACTCATTNAGCCCTTCTACNANAN  
5 CANNAAACTGCNNGGATGCCCNCTACCCAAAAGAAANGCCANTNTTCTTTTCCCTTTTGGGAAGAAC  
CCGGCCCCGNCNTNGNGTTCCCAAACATNTTGCNNCACCCCNNTTANTCCANGTACCNAGGTGCTNTC  
TATCACCCCTTTTTTTTATTTCNGCCCGACCTTGGGGCANCTAANCNCCCNGANGGACCATNTTTTTTANG  
GGAACNNGGTNAANATGGGANANGCGTCCNTTNNCCCCCATACCC

10 TNAGNCCTATAGTGNNGTCTGATTACAGTGGCGGNCCGCTCTANAACCTAGTGGATCCCCCGGCCTGCA  
GGAATTCGGCACGAGGATGGCACGTCCCCAGTGGTGGGGATGTGCCGCGCTTCCTGANTAANTGGAAT  
TGGNAGNAGTGNCTGCCCNNTNNNGNNTTTNNTNGGNAAAAAGGTNNCNCCNNTTNNNATNAANNNT  
TTNCNNGNNNNNAAANNNNNNNGGGNNGGATTTNNNGNNGNTTTCCAAGGGNAGGNCCCTTTTTTTN  
15 NGGANNTTTGNACNCTTNGNAGAANNCAGCCTGTGTANTTAACCGGTGGGAAGNCTTGNGNGTTGNG  
CATTCGTNCTTGNGCACTATATTTGCGCCTGCGCTATGNGCACAANAGAGCCTGTGNCTGTTNAGGCG  
CCTGTNTTTTCANACCCANNTNTGNGACANCAAGTGCNCNACANGNTNTCAGGGNTNGGNGTGTNCA  
NGANNCCCCTCTATATATGNNTTTGCGNGCGNCNTGGANNACCCACACCCCTATAGCNGGNGTGATAN  
GCGCTGCTNNTANCAGANNAGGGNCCNCCAGTGTAANNTCTTTGAAGGNGANCCCNCCCTCCNNTCTA  
20 ACNTTCNCCTNNTGTAGAGNGCGCGGTGGAGATTCCNAAAGAGGCANAAANNCNTGNNGCTNNGGTTN  
GGANAATCNTCTGNTTNCNNTCGNTNCTTATTNANGTGNCCNTNNNGCCCTCNTTNAATCANANNATN  
NTNTNNTTAAACNNNCTTTAACCANCTNNGTTATCTTNGNGTTTCTGTTNANTTNTCTATAAAANTCNT  
NNTNCNTAGNGAAANAAAAATGNGNNAAGAACNACCGGTNNAGNNCNGCCTTNTTTTCTNTTNTCTN  
NGCNAAGTANCTNNCCTTCTTTNNGGGACGGAANNANCCTNTTCTTCTCCTNNTTTTTNCTANNNGN  
25 TAAGTCTATATTAAGCCCNCCNNCCTTCTANACCNNTCCATGTGCGCAANATNACACAACCG

30 TNAGNCCTATAGTGNNGTCTGATTACAGTGGCGGNCCGCTCTANAACCTAGTGGATCCCCCGGCCTGCA  
GGAATTCGGCACGAGGATGGCACGTCCCCAGTGGTGGGGATGTGCCGCGCTTCCTGANTAANTGGAAT  
TGGNAGNAGTGNCTGCCCNNTNNNGNNTTTNNTNGGNAAAAAGGTNNCNCCNNTTNNNATNAANNNT  
TTNCNNGNNNNNAAANNNNNNNGGGNNGGATTTNNNGNNGNTTTCCAAGGGNAGGNCCCTTTTTTTN  
NGGANNTTTGNACNCTTNGNAGAANNCAGCCTGTGTANTTAACCGGTGGGAAGNCTTGNGNGTTGNG  
CATTCGTNCTTGNGCACTATATTTGCGCCTGCGCTATGNGCACAANAGAGCCTGTGNCTGTTNAGGCG  
35 CCTGTNTTTTCANACCCANNTNTGNGACANCAAGTGCNCNACANGNTNTCAGGGNTNGGNGTGTNCA  
NGANNCCCCTCTATATATGNNTTTGCGNGCGNCNTGGANNACCCACACCCCTATAGCNGGNGTGATAN  
GCGCTGCTNNTANCAGANNAGGGNCCNCCAGTGTAANNTCTTTGAAGGNGANCCCNCCCTCCNNTCTA  
ACNTTCNCCTNNTGTAGAGNGCGCGGTGGAGATTCCNAAAGAGGCANAAANNCNTGNNGCTNNGGTTN  
GGANAATCNTCTGNTTNCNNTCGNTNCTTATTNANGTGNCCNTNNNGCCCTCNTTNAATCANANNATN  
NTNTNNTTAAACNNNCTTTAACCANCTNNGTTATCTTNGNGTTTCTGTTNANTTNTCTATAAAANTCNT  
40 NNTNCNTAGNGAAANAAAAATGNGNNAAGAACNACCGGTNNAGNNCNGCCTTNTTTTCTNTTNTCTN  
NGCNAAGTANCTNNCCTTCTTTNNGGGACGGAANNANCCTNTTCTTCTCCTNNTTTTTNCTANNNGN  
TAAGTCTATATTAAGCCCNCCNNCCTTCTANACCNNTCCATGTGCGCAANATNACACAACCG

45 TTGANAANNTCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
AATTNACTGCNAGGGNGNNAACANGGNNNAANNACATCGGACCCTCNNTANGGGACTGGTGGANCTNAA  
CTCTCTGNGANGTGNACAGATTGGNACTCTTCTNCTANACATGTATANCNTGAGANAGCGGNTGCCGA  
ANAACACGGCAGCTGCANGCGGACTCCNTGTTNTTGTCTGAGGGTGGNNAGGAGACGACGCGCTACT  
GCACCCGACACCGGNTTGTCTTTCCGCCAGGAGTCTCTTTTACNTGGGCATTGGTGGTCAACCGAGC  
50 CGGCTTGTACGGGNTNGATCAACGTGGACACCGGNACGNCNATTTTGTTCGGGCCNAGGCNTTCCTC  
CANNCNTGCAACTNGGATGGNAAAAATCCATNCCANGGACNCTTCAAGGAAANNTCCGCCGNGAAT  
NNATGTCCAATCCNCAACCAANAATTGGCCGNGGTTNTGGCNTTTTCGNAANCCCTNNTGGGNNTCC  
TAACTTTTTGGCGGGCNGGCAAAACCCCNAAACANGGGGCAGGNATTTTGNAGGGNNGGNTCCTTTTCN  
AGGGGCCTTTNACTAAGGTTCAATTGGTNAACAANNCCCTTTTTNTTTTATCAAAAAAATNTGGGGAA  
55 GTGGCCGGTTTTNTTAAANANANCGNCNATTGGNACCCTTGAAGGNTTTTTNGCCCNNTANNNCNAAAA  
NAAAAATTTTCCATTNGGGGGCCCCNCCGNANGNTAAATTGAAGGTTTTTTAAAANTNNGGGAANTN



GGGTNNGNGGCNNNTNAAATCNNNTNNNNNNNNNTCNNNNNCNCCCNNCCCCCTNCTANCNTTCTNT  
5 TTCTTTCTCTNCCCCCCCCCNAANGGNGANGNATGAGTAGATTGACCNNCTTTTGAAGNCNNCNTTG  
GAGNTGCATCACNGNGNCTACCTTTNNCNTGNTCTTNTTGTCTTNTCCTCCCANCACAATCCACNAN  
ATNATTANATNTTCACATTACATNANGCNAATCCNTNATTANACTTCNNGGGCCTCNETCTCTCACGN  
CTTNATNCTNCCTCCTNATACNNTTNACCGCCANCACTNNCNTNNCANCNCATACTANNCCAANNTNN  
CACTNCCCATATNNCTGANTTTNATNNANTTTACATNGTNTTNNNAAATNTTTNCTCACACNTTCTNAC  
10 NANANTNTTTNNNTCTNTCNCNTTANCAATNTCATCTANTCNCNTNACNNTCATNTTACGCTTNGTNN  
NCNACTTCTATCTTCNNCNTNATTNACNNTATTCTNATANCNNCNNNTNACGTNANATAATCTNNNT  
TTACTNNTNNGNCTNTTGTNNGCGACAANCTNGNTTCTCTACNNTNTTANCTCACTNNNAACNCTANC  
NNTTTANNNCTNNTGTNNTCCTANNTNNTAATCTTANNTNCTCACTTACTANCCTNGNGNTANACAT  
ACNNCTTTAAAACCTNGANNANCTNTNCTANAACCTCACNTCNCCTCTNNNAANCNNNTNCNGNN  
15 NAAGNNAGAANNNAANTNGCNTNTTTTANTGACTGNTNANNNCGANNCTAAGNTAANCTNNTATTNN  
NANTNNGANACAATNTNNGCGNNATCNAATANACTNNCTTNTCTNNACAGGGNNTCTAGCAANNCGCG  
CTGNTTAAACACGNNTGTNNANANTNCCANNCTNTGANAATNAAGACNACTANNNTCATNNACNNTT  
NGNNCACNACACTCTNTTNNNNCAGTNCNNNAGNCNCCTNNCNTCNACNTTNTCTNANNTGTNNNA  
NTANNNNNNTNTNNGATACNNCNCNANAANCTNTNNNNATCNGCTNNTCNATNNAANANTNATAGT  
20 TANTANCNNNNATNNCNCNTGGNNTNCGCANANAGANCTCATNNTCTCNCNTNGNNTANAGTNNNTGA  
NNNANCNTATATCNCNCNATCNCGACGTGCAAGATANNNCAANNANCAANGNNCNNNTNCTGATCT  
CACNNANANNGACGCTNAATANNCGNTATCTNACTCTCATTCGNGNTNNANCNCATANNTGCNCNTN  
NGACNCAACNANCNANNGATNANANTNNCANNNTNNNNACNCNANANANTTGANCACNCNNGNTAT  
25 ACTNANACNANACAGACNNGAGCGTCTANATTGTNATANACGACACNNGATCGANATANNNCNCGN  
GNANANNTNTCNNNCGANTCACATTNTGTNNACACGANACATNTAANNACACNCGTCGTGACTGNC  
NNGTGTGNCACGANTATCGNNANANACNANTCTACATATATGTANACNCGACNCACGTACACNAA  
GACANGNGNNACNTGANTNCNTCATATNTCGANNCNANNCTAAACNAAANGANACNATANGTNACG  
NGACNACATCNACTATTNTACANGATATNAGNTGCCGTTAAANACTCNATGTNTTNNNGCNGTNTNAT  
30 NATGNCNC

NCAANATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAAGTGTGGATCCCCCGGGCTGCAGGAA  
ATTCCGGCAGCAGGATGGCACGTCCCCAGTGTGGGGATGTGCCGTGCTTCCTGAATTAGTGTATTGTAG  
35 GAGTTGCTGCCCATTTCTGCTCTTCATTGTGAGAGAGGTTACACCCACTTATAATCAGTATTTTCTGG  
CACTAAAACAGCAGGGCTGGTATTTGCTGCTGCTTTCCCAGGGCAGGGTCCCTTCTTTTCGGCACTTTT  
GAACACTTGCAAGACACAGCCCTGTTATCTAACGGGTGGCAGGCATGTGTGTCTGCACTCGCTCTTTGC  
CACTATTTTGCCCTGCTCCATGCCAGAGAGCCCTGTCCCTGCCAGGCCCTGCCTTCCCAGCCCCAACTT  
GGGACCAAAGTGCAAGACGGGATCACAGGTTGGGGTGTCCAAGTGACCCCTCTCTATAGTGCTTCCGT  
40 GGGCCAAGTCGACACCAGCCCCCTANCGGGGTGGGATGGGCGGTGCTTAAAGAGGAAGGGGACCAAG  
TGIANCAACTTGCCAGGGACCCACCCCTTCCTCACATTCGGGCCTGTGCAAGTGGGCGTGGGGATTC  
TNCAAAGGGGCCAAANGCCTGGGCTTGGTCGGNATTCTCTGCTCCTTGCTCTTATCTGGGNACATGC  
ACACTTCTAAATGCANAATTGCTTTGAACTTTAAACTGGTCAANTTTGGGTTTCGNTTTGGGACCGAA  
TTTAAAAAANGTTTTTANTNNGGGGAAAATTTGGGGGAAAAAACNNGGGGNNGGGNCCNGGTTT  
45 TTTTTTTTTTTTGGGGAAAANANANGGNCNNTTTNNCGGAGGAAACCCNTTTTTGNTNCNANTTTTTN  
NGGGAANNNGNCNAAAANCNNTNCNCCCCNNNNAAANCCNTTGGNCCNGGNAATNAAAAANNGGGG  
TTNNNAANNNCNNTNNGGGGGCGGGNNNGNTTTTTTTGGGNACCTTNGGGGG

GCCCTATANNAGNCGTATNACAGGGGGCGGCCGCTCTAGAAGTGTGGATCCCCCGGGCTGCAGGAA  
50 TTCGGCAGCAGGNCNTGANNTATGANNNCNCNCGNGTGANNCAANNNANAGTACTCGTGCGNNT  
GAANCCNGCNCNTTNAATTTTNGNAATGCTGNCTTNAANANNGCNGTTCANATCTAGNGNNACAG  
NCNGNNNAACTNTTNNACAAANCTTATNATNTNATTCTGANCGCCNCTATTANTNNTGNTGNANGGGA  
NGNNNGAGNTAAATCCCTGTGANGAAAAATTAANTAGATATTCTNTGTGGTNCNANATTAACAGGAA  
GGCGCGCCCGATGAATAGGCCGTTTTACTCTGCCACAAGCGTCAANCGTTAATTATACACNNAANCAG  
55 AANGCNATTTTGNNTTCCACTNAGANAAGANATATACTTTTCNAGAGACNTAACNGAAAAATTATAACC  
ATTNGNCAGAGGNCCANNCTTGAGCACCTTGAGACNANNANCCTGGGCTCANTNTCCCCACNAGAC







NTGTTCTTAAGATNACCCACCAAAGNANTCTNNTNTCGNGATTNTGNNNATTNNNTANCTCTCTACTTT  
AAGCTATTNCTCTCTCNANATACGTACNTNTCCGNTANCNNTCCC

5 TTTGANACNGNTGGAGCTCCNCCGCGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
NANNAACTGGAAAGGNNTNATNANGNNTAATNNNTTNGACCNCCCAATGGGGACAATCTGCTGCAAT  
TTATGACACNNTAATATCAACNNAATATATATATACNATATATATATANATNCTNTCTAANNACTA  
TNTTGAAACANTTATNGCANNTGTTNTCTTTTATTTGGGGGCGNNNNCTNCNTTTTTGAANNACACGN  
NCTACCCTTNTNTNCTCCTNCAATNNCTTTCCNATCTCACNGANATGNATTTTTTCNGNNTCNTCAANNT  
10 TNCCNGGCTCNCTCTNANNCNANNNTTTTTCCACATTTTCTCTACNCTCNCTANTACCTATNTCANGT  
TCNNCNCCTTCTNTCACNTTCTTTNNNACTNNCCTATTTAATAGTTTNTTTNAATTATCTANCTNNCCAA  
GNAACCNTCNGTTTCCCTTNNNTCTTNAATTTCTCCCTTCTACANTTNTANNCTTNNACCTCCTTTTNTNA  
NNNNNTNNNACCTTNNNNTTTGGTNTTCTTNNNTTNTTTCNNATNATNNTTNTCNNTTNCCTNATNTTA  
15 TAATCAACAGNGTNNNATAAAATNNNACTNNGNCCANNTCCCANCTTGTCATCTTAANNCCCCNCNNT  
TTTTTNTTNAACCATCNCNCNNNTNTCTGNTTCTATTTTTTANTTGGCNTNCCNTANCCCGNGNTAC  
TNNTTATNAANNANNCTTANCTTTANCTTNTNNTCCCTNANNAATCCCNNTGCCTNNNNTTNCTAN  
NNTANTNNANNCTTNNAGTTTTCTNCCNTNCAANTCTNNNAACNAANTCTNNCTACNNNNNNNTNTT  
TNCCTTACCTNTCNAANCCTTNTCNAACCTTCCCNCTTCTACCGTCNTCNCCTTCACNTTNTTGTCT  
20 CTTTCTAANCNATCTCGTTCNNCTCANTCNTNCCNTNTNCCNTCTTNTCANACTCTTTTNTTCTCCNT  
CACNANCNNCTCNCAATNTTNTNTNCC

25 TTAANCACAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
GCTTATTGAATGAAAACCTCCAGAGACTGAAAAACCAACATGAGGGTAGCAGGTGCTGCAAAGTTGG  
TGGTCGCTGTGGCAGTATTTTTACTGACATCTATGTTATTTCTCAAGTATTCGAAATAAAATGGATG  
CAAGTTTAGGAAATCTATTTGCAAGGTCAGCATTTGGATGCGGTTGTACGTTCTACAAAACCTCCAGA  
TATAAATGTGGAATCTCAAAGCTTGCCCTGAGAAGCATTTTGCTTTTAAATGGCAAGTGGAGCAGC  
CAATGTGGTGGGACCCAAAATCTGCCTAGAGGACAATGTTTAAATGAGTGGTGTTAAGAATAATGTTG  
30 GAAGAGGAATCAATGTTGCCCTGGTAAATGGCAAAACGGGAGAACTAATAGACACCAGATTTTTTGAC  
ATGTGGGGAGGAAAATGTGGNCCANTTATTGAGTTCTGAAGGCCATACAAGATGGACCAATAGTCTA  
ATGGGAACATATGATGATGGGACCANCCAACCTCAATGATGANGCCCGCGGCTGATTGCTGAATGGGG  
AGTACATCTATTACTCATCTTGGTTCAAAACACTGGGGTCTTNTGGGGNGGAAAAGGCATTAATAACA  
AAAGCCCTTTTGACNGCCCCNTAAGGACCATTAGGGCCCCAANTAAATTTGAANGGATGGCCCTGAAT  
35 TTTNGGAAATGGAAAGGATGCCTTTCCCCAAAACCAANACTGGCCGTGGANAAAAANCCGAAGGGGG  
NCCCCNTTTTCTTGTAAANGGGGNAAAGCCCTTNCCTAAAAAACTTCCNTGGTAAATNTTTTTAA  
ANACNTTGGCCCCCCTTTTNNGGGGNGNGCCCTTGTCCTCCTNTNTNTTTTTTGAAATTCAGN

40 TNNANAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GAATTCGGCACGAGGGTGGCCTTCTCCTCTCCCCGCCATGGCGTGTGCTCGTCCACTGATATCAGTGTA  
CTCCGAAAAGGGGGAGTCCTCTGGCAAAAATGTCACTTTGCCTGCTGTGTTCAAGGCTCCCATTCGAC  
CCGATATTGTAACTTTGTTACACCAACTTGCACAAAAACAACAGACAGCCCTATGCTGTCAGTGAA  
TTAGCAGGTCATCAAACCACTGCTGAGTCTTGGGGTACCGGCAGAGCTGTGGCTCGAATTCAGGGT  
45 TCGAGGTGGCGGACTCACCGTTCCGGTCAGGGCGCTTTTGAAACATGTGTCGTGGGGGCCGATGT  
TTGCGCCAACTAAGACCTGGCGACGTTGGCACCGCAGAGTGAATACGACGCAGAAGCGATACGCCAT  
CTGCTCTGCACTGGCTGCCCTCAGCCTTACCAGCGCTGGTCATGTCTAAAGGTCATCGTATAGAGGAAGT  
TCCTGAACCTTNTTTGGTGGTGAAGATAAAAGTTGAAGGCTACAAGAAGACCAAGGAGGCTGTGTTT  
GCTTCTGAAGAACTTAANGGCCCTGGAATGATATCAAAAAAGGTCTATGCCTTTTCAGCGAATGANA  
NCTGGCAAAAGGCAAGANGANAAACCCGTCNCCGTATNCAACGCAAGGGGACCCTTGCTCATCTAT  
50 NATGANGGACAATGGGTATCATTCAAGGNCTTTNAAAAACATTCCCTGGAATTACCTTTGCTTAAANG  
GAAGCCAACCTGAACANTTTTGNAACTTGGTTCCTGGGGGGGCACCGGNGGGAACGTTTTTTGNANT  
TTGGAAGTGAAGNGCNTTTTTCNAAAGGTTAAAGAACCTTTTTTGGGGCCCTTGNGGTTAAACAC  
CCCTCNCCTTNAANAAA

55

TTGGAAACCGTTGGACTCCCCGNGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGTA  
 AAAGTTGNTCTTCCTTTGGCTGGTAAAGTAACATGTACAACACTGATTNGGNGCTCTGTGTATCAAGG  
 AGACATTGCCTCTGGCTGAATGAAGCAGGGTTTGTGAAAAGTGCTCANAAACCAGAAAGTTCCTGTGC  
 TTTACAGCTTTTGAGGCTTTTCCTTTTACACTGGAGACTTTCTTCTGTTTTAATGTGGCTACTGTGT  
 5 GGCTCANAAATGGCTGCTGTGATGAAAATGCTCATTTGTTAGGAAAAAGAGGTAGCTACATTCTCATT  
 TTGAAAGGACCATGAGCTATTTAAAAAACCCTAAGATGTGGTTTTATTACATGTNAGGGGAGCT  
 CTTGATCATGTTACATTTGTTTTAAGATAAAGCGATTTTTTTTTTCTGCTTTTAGGGTTAAAAATCAA  
 ACACACTTTACNCTTTTATNATTTAGGCNNCTTATAGTGTANGTAAGGGTNTGCTGGAACCGTANTG  
 TTANNGGAACCCCNANANGTAATNCTTATTTAAANGGAGCCNTATTTTTTTTNAACCTGTNGATCTTG  
 10 GNTAANTACNAGNANGTCNGNNTTANTCNANAAAAATTTTNAATAAAGCNCITTAANTTTTCNNATTGGG  
 GAAAAATTTATAAAAAANNNTTNTTTTTTAAANNAAAAAGCCNNNTTTTTTTTTTANNAAAAAANCA  
 GGGANTTNGACAATTAAAAATTTGTATNATATNGGGCCNTAANANAANAAAAATTTACGNCNGGGNAT  
 TTTTGGGGAANNATAAACANNCTATTAAAAANACCTTTGGAAAACTNGGAANAAATTTTANTTATG  
 GGGNTGGGNGGGNNNTNTATTCTNCAAAAAATCTTTNTTAANTTTACNATANATNATCTTGNANNGN  
 15 GANNAAGCCCTNTTGTCTTTTNACTAAATANTCTTTGNCCAAGNTTNGNGAANAAAAATATTNTAAN  
 NNTNT  
  
 GNCCTTTANTTANGTGNANGTTCGGTAATTAACNNGGGGGANTNCCTNNTNTTAAANCTTCGTGCGCT  
 20 TCNTTCNNNATGCNCTNGNCANGCANTCCCTTGACCTCCCNAGANTTCTTTATCCTACCTCANNNCN  
 TGACNNGCANTTCNANNATTATNTNGGGTATNTCCTNTATGCACAANNCNNNACNTTACTNGNGTAC  
 TTATTCTNGCANNTGATCGTACCTCTTNCGCTTCANTTNANACCATNTNNNAANTTCCNTTGCTCCCC  
 CATTTGGNTANCTACNCCNGNNANAGATNTCTANATANNNTNNGTTGGCCCATANCTGNTGTTGNNC  
 25 TNTATCNNNCTCAGGCTCTNTGAGNATGANAATTNATNTTCGNTNANNANCGNTNGAAGTCCTATCACT  
 TTANGTTNGNNAAGNGNNGNCTNTNANTCAANGNNNTANNNAGGCNTGTNNNGNGCTGTCNTTCNN  
 ANNTACGNTGNNAAGNNNANGCNCCTCANGCCNTAATAAGNNNANGGGGGTTNTNTGNNTAAANTCA  
 GNTNGACNANNNTATNTNCCNCNCNGCTNNGGGGGCCNGTANTANNNTNACTNAGGTTAAAAATNGG  
 NNNNGGNNNNNNATANGTGCCTACANTGANNNNTGCNAAGGNNNACNNTTAANTATNNNGAANNAA  
 ANNNANGNGNGTNGNTNTNTAACTANTNACATNNATTNNNNNTGNNAGTANTTCTNNTNNNINCACG  
 30 AGTCGGGNTTGGNAGTNTANCNNNNNTCTNGNANGNNGNANGNGNTNNNNNATNTTATTNTNTNT  
 NGNGNGGCTNNNANTAATAANTTANNNGNCAATNNGCNNNGGNNANNNGCCGNCCTTTTAGGATANN  
 NNNNGGGCCGNNNCAGTANNNGNTAATNNGNNTCNGNNNGCGANNNTGCANGGCNGGANCTNA  
 NNNGGNTNATTANACCANNNTGNNNTGGTATCGTNNNNNTGNCTANTNANNNGCGNNAGGGGNAGTN  
 35 GCGCNCNCGNATANATGAATNNGTNGGANNACAGGAGNGTANTACTANTGCNTTTANCANGNANNTAGC  
 NGAGTCNCNTANNTGGTGNGTGTGTATTATTANCAGTTNNNTTGTGAACCTCNNCAAGANANCNTA  
 TGCAGAGNAATNTANCCTTNTANNCGTGNTNNAATNCNCNNGNGCANACNCNCGNGTNTCTCNCNAG  
 CGCTNNNTACTGNNNACATGNANTCACCGCNCATANTGNATCATCTNNNTGATANCTAGANACACTTG  
 TNGTANNTNACCG  
  
 GNCTATCTGGAGCTNCACCNCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAAT  
 40 TCGGCACGAGGCTCTGTCCAAAGGGTTCAGGAAGAGAACATGATGGTGAGCCACAGCCCTCTCAGGA  
 TTCGCTGGCATCTCATCTGAGGGTGGGAGGGCATACTGGGTCTTCCGTCTCCTCCAAGCTTTCTTTGTC  
 TGTCTCAATCTCTTGGCCTGGCCCCCTCTCTAAGAGGGGATGGCAGTTATCTGGGCTTCTCTCTGGGATG  
 45 GCCGCCATCTTTAGTAATTGAGAAGGTATTAGATAAATCAGTACCCCGCCTAGAGATATTCCTCTAA  
 GTTTTCAAAGAGAGCTGGGCTGTAGTTATCCCAAACGTGCATTCTTCAAAGTCCAGTCATCCTCTGG  
 CCTTTTCTTTGTGACTCCATACAAAGAGTCATGTTCTGCCCAAAGGCGTCCATTCCAAGCCTGGACT  
 TGGGCTCCCCCGTGAGAAATCTTCCCAACAGCTTCTTGGCCCAAAGCTTCCCAGACCTCCTCCCCTGGAA  
 CCTCCAGCCCGAGTCCCCGTGTACACGTGGGCTGTCCCAGGCAGCCAGCATCCCTTGTAAGTTCCCTCT  
 50 TTGGAAATGGTGTGTGGGTGTTCAAGTTCTGTGTCTGGTGAATGAAACAGACAGTGAATCTTCTGTG  
 ACCTGTGGGAAGCTGTGAAANCAACTTCTGGAACGCCGANGAGCTTGTGTTGCTTTGAACCGGGGAANA  
 AAAACTGNGTTTTGAGGTTTANCTGAAAATTAAGGGGGAAAAAAGTTNATTAANGTGAATNG  
 TAATNGAAANCTGGTNTTAAAAANAACNTNGAAACCCCCAAAAAAGTTNATTAANGTGAATNG  
 55 GGGGGGCCCCGGGNNCCCATTTNCCNTTAANNNGGGGGNGNNNNNTAANNNNNNNNNNNNNNNNNNC  
 NNNNNNNNNNNNNNNNNNTNNNNNNNNNNNNNC

GCCCTATNTGGAGNTGCATCNCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGTTT  
GGACTCTGAGACTGACAAAAGGGGTACCATGCTGTCTGGCACTGCNGCACNCNTTTGCTGAAGAAAA  
GTACCCACCTTGANTGGTAATCCCCANNTTCACTGANCTTGTGGCCCTGNACCTCACTCTAGGNATGA  
5 AACCNNGATGCCNGGCTNGTNCATAAACCCCTATTCTTANTATTCCNAAGGAGGCCANTNNTTNTACT  
GAAAGCATNNCCNATACTACCTGANCACTANTCTAAGAGNANANNCTNNATACCATATNNAATATTN  
ATAGGCNATTTTANGAAGCNACGGAANGANNACAAGTANNTCATTNCTGATNCTNNNTGTANCAACN  
NTGTTTACATNCTACTGCCACANTNTGNNTCTCNTNCNTTGNAGGGACTNNTCCTNANNTNAGNNNA  
NNGTGANTCNGNTNTTTTTANNGTTTAANTGCAAAAGGCCTGAATNNNNNNNACTGACTTNGNTNAN  
10 CTCTAGCCNAANCCCTNCCNNNTNCGNANNGANGNCCCACATAGNCAGNTNNTTTTACTCGTCCNN  
ANCGCCTTCCCTNCTTTCNCGACANNANNNATACCTGNGGCCATNCCCTNGANNGGCGNTTATGANNG  
CTTNGANTCTCTNGTTCCTCCAACCTNTTCTNNGGAGNAGCCNTGGNNATTNNTNNNANTTNGGTA  
CTGCAAAGNGTNCNCTNTAGGCCTTCTNNTANTTNTCTCCCTTNGTNCACCCNTNCTNTNGNNAN  
GNCTANCANNGNCTNANTCCNGGTTTTAACNTCTCNNTTTNCAAAAANGCACANNNNNNCTTTGGNN  
15 ANNTTGCNCTNTTNCATNNAATGTCNNAATTTTNGTTTTATATACANTCCATTNCGGNAAAANTCTT  
CNCATGGCNTCNCATTNCTTCCATCTNCTTTNTTCGCTNNNTNTGNCTNNNATTGCTNCTATACNTCN  
CCATTNNTGNNTNNANTGTAAANNACC

NCAAACTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
CGGCACGAGGCTCTGTCCAAAGGGTTCAGGAAGAGAACATGATGGTGAGCCACAGCCCTCTCAGGAT  
TCGCTGGCATCTCATCTGAGGGTGGGAGGGCATACTGGGTCTTCCGTCTCCTCCAANCTTTCTTTGNCT  
GNCTNAATCTCTNGGCCTGGCCNTNTNTAAAGGGNATGGCAGTANTNNGGCNTTNTTTNGGAANG  
20 GCCGCCNTNTTNANNANTGGAAAAGGNNTAAATAANNAACNTCCCCNGCNTAAAAATTTCTTTTAA  
NTTTTAAANAAAGAGNNGGNGTGTANTTATCCCAAACGCCATTNTTCAAAGTNCAGCANATCCTG  
TGGCCTTTNTCTTTGANACTCNANACAANAGAGNNGTGTGTGCCNNANGNGCGCANATTNNANCCCN  
NGCNCTNGCTCNCCNCGAGANANATTTCNANACATTTTTTGGCCCAAGNTTCNCAANCTTCTCCT  
GTGAAACCTNCANCCAGACCCNCGTGNACACGNGGGTNTGNCNCANGCACACCANATCCCNTGAAAG  
NCNCTTTTGAGAAAAGGNGNGGGGGTGACAANTGTGGGTGGTGGCGATAACAACANNCGCNCTCCC  
30 CTGCACCTGNAGAGCTGAAAAACNCTGTACACCCCAAAAGCTTTTTNTTTCACCGANAAAAANCTGG  
NTTTNGANTNAGCTNAAATGGGGGGNAAAAAANGTTCNTNNGNNGCTGTNANGNCCCNNTTATAA  
AANNCCNNGNCCCCNAAAAAANNNCCNGGGGGGGGGGGCCCCNNNNNNNNNTTTTTNN  
NNNNNNNNNNNN

NCAAACTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
CGGCACGAGGCTCTGTCCAAAGGGTTCAGGAAGAGAACATGATGGTGAGCCACAGCCCTCTCAGGAT  
TCGCTGGCATCTCATCTGAGGGTGGGAGGGCATACTGGGTCTTCCGTCTCCTCCAANCTTTCTTTGNCT  
GNCTNAATCTCTNGGCCTGGCCNTNTNTAAAGGGNATGGCAGTANTNNGGCNTTNTTTNGGAANG  
40 GCCGCCNTNTTNANNANTGGAAAAGGNNTAAATAANNAACNTCCCCNGCNTAAAAATTTCTTTTAA  
NTTTTAAANAAAGAGNNGGNGTGTANTTATCCCAAACGCCATTNTTCAAAGTNCAGCANATCCTG  
TGGCCTTTNTCTTTGANACTCNANACAANAGAGNNGTGTGTGCCNNANGNGCGCANATTNNANCCCN  
NGCNCTNGCTCNCCNCGAGANANATTTCNANACATTTTTTGGCCCAAGNTTCNCAANCTTCTCCT  
GTGAAACCTNCANCCAGACCCNCGTGNACACGNGGGTNTGNCNCANGCACACCANATCCCNTGAAAG  
45 NCNCTTTTGAGAAAAGGNGNGGGGGTGACAANTGTGGGTGGTGGCGATAACAACANNCGCNCTCCC  
CTGCACCTGNAGAGCTGAAAAACNCTGTACACCCCAAAAGCTTTTTNTTTCACCGANAAAAANCTGG  
NTTTNGANTNAGCTNAAATGGGGGGNAAAAAANGTTCNTNNGNNGCTGTNANGNCCCNNTTATAA  
AANNCCNNGNCCCCNAAAAAANNNCCNGGGGGGGGGGGCCCCNNNNNNNNNTTTTTNN  
NNNNNNNNNNNN

TTGANACCNTCTGGAGCTCCCCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
ATTCCGNACGAGGNNNNNTNATGTNTGNACCTGGNCGNTGGGCCNNGGGCNTANNCCCNCTACTN  
GGAGTNTTACNATNTTCTTAATTTGGAACCTCAANAGTCCCTACAAGGGTNNAAAGCCCTAACCNNA  
55 TCTGGNCCAGGGTGGCCNTCNCNNCNANCTGGACCNTCACTTNTGACTTNCATGAAGGCNATCCCGGC  
TTTTTCTTTGGGTCCCCCTGTNNGGGTTANCCNTCCACTACCACAAAAANAAAGACTTTGNGGGGAAG

GGCCTGNACCCCAATCNNCCTTNANTTTTTCCCTCTNAAAAANNNGTTGGAAACCACAATTTCCATTCT  
 NGCNAGCCCCCTNGNGAAGGAAAANNAGCAAGGNCTTNAACNAAAAAANGGTNCCTTTTGNAAGNN  
 ACNNNNAGAAGGTTTGTTTTGANCNTTNNNNNTAAACCATTNCCTTTGGTTATTTNCCTGNTTCCNTT  
 ACTGGGNTNATTTTAAANNNCNTTTTTANTGTNGGCTGTAAACAACCTTTCCCGCANTTTANTTCCNTTT  
 5 CCCATGAAACCNTTTTANTTTNTTGTCTNAAATNCTTTAANNCCATGNGGGGANGGCNTNTAAANANTGGN  
 NNNCCCCTNGGTGTTTTTANGAANAAAAANNAANGNANACCCCAAACCCCCCTTNGCCANCCCATTTT  
 TTTTTTTNAANNAAANTTNTANCCAATGGGAAATGGNGGGNTAAAANNANTTNTNNNCTNNGCCCCGC  
 CCANTTTAAAAATNGGAAAAANTGGGGGGNAACTTAAAAACCACCCNNCCCCCTTNGGGAAAAACCTTTTT  
 AAACNTTTTTCCCCGNGGNATTCCTTNAAGNCNNTTTCNNGGGNCNNTNTAAAGGGGNTAAAAAC  
 10 AAAAAANTTTNCCNNTGGTCCGTTTCANAATTCCNNTNCCNNTNGGTNTATCAACCTNGGCCNCTNGG  
 NCGCTTTTGNTNTACATNNNNNCCCATTTCCTTTTTTNCCTCTTTAGNCCCNNTTNTGCCNCCCCCTT  
 TTGANNACT

TTNAACACAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGA  
 ATTCGGCACGAGGCTCAGAACTAAACTGTTAGGGTGGGTTTTTTCGTGGAGGACAGGGGTAGTCTTTT  
 GATATTCATTTTTTGTATTTTGAGCTTTTCTGCTCTAGGGTACGGGAGATGAACCTTTATTTACAATACTT  
 TGATTTGGCAGGTTTTCTTCTACTTTTGGCTGCCTGNAACGTGTNCCATATGATGTAAAAAGCANGTGT  
 AGTGTCCCATTATTATGTGGTTTCGGGGGATTTTCATTTGTTTTTAAAAANTAACCCATGTCAGCTGGGA  
 20 TTAGACTNCCTANAATCTATCAGTGGNAAANTTACATTGAAAAAATGCCTTTGGAAAAATNAAATTTCA  
 NACAAAAAGTGCTTAAGAACTGGTATTTTTTCTAAGTGCTTCTATTTATACCAAAAAGCNTTAAAGTAA  
 CCCANTGCCCAGTACCATTCTTGAAAAATCTTTTATTTAACCGACCNGTGCTTATTTNATTAAAAACA  
 GNTGATTCTNTTAATTATTACNNGGCCGTAAGNTATAATTATTGGGGTNAAAAATACCTTGNAATATN  
 GGACTTTCTGGCCAGTNGGGGAATTTTCACTNAATTTCTTTTGGTGGNGGGATGGTTNGAATTAAAAAN  
 25 CTGGAAGNGGGGGGAAAAATTTGACTNNNTTAAAAAGNGTGGNCCCCCCCCAAAAATCAANAATTTAAAT  
 TGGGCCTGGGCCCTGGNAAAACCTAATCCTTACCTNCNNAATCTTAACCCCTTNTTAGGCTTGGAAN  
 AAAAAGTTGGGGANTTTTGAAAAANGGTTGGCANACCTTTTCCTTGGCCNAAAAAACNTTNTTTTTTG  
 AAACNTGGGCGGGANTTGGNTTGGGANTTTGNAAAAAAAATTTCAAATTGGTCCCCCAAACCTN

TNNNNAAAAGCTGGAGCTCCACCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAG  
 GNNTTNCAGGACNGCTNAGGGAGAGGAAGCNGGGTGTCTCCNANNAGTNCNNGGNTGCANAGGGG  
 AGAGAGCTGACCCTTNTCAAACCCCTGCTTTGGGCCAGCCCTGCGCCAGGTGCTTCACAGCTCTTATN  
 TGCCAGATTTTCCACCTTGNGGCNCATGGNGCCCCTAACCAACATNNCAAGAGGCCGATCACCTTGC  
 35 CACATNTGTGCANGACCTGGGACCACAGGCGTGGACAGGAAGGGCTCTTAAGCCNTCTTTTTACANAT  
 GAAAATGCCAGGGCCCAGGGAGGATNAGCAGTCTTTGGAGGTTACCCANCCGGAATACTGGGAGACC  
 TGAACCCAGCATTCTGACTCTGCATTNAGTGCTCGCTCCATGATGCAGNGGGTCCTAGCCCCCNCTGA  
 AATGGGTCCCCTCTTCACTGNGTTTCCCAGNATNCTTGCTCTGACCAAACCGGNGAAGGGACACACNC  
 CCACCCNCAAAAGATGGAATCATTTCTTAAACCGTCTTTGTCCCAAACCTGCCTGCCNNTCCAAACCCGTN  
 40 CCCCTGNNCCCTGACCNTGCTGGNTGGGGAAAGAGGCTCACGTGGGCCAGGCTGAGCANNNAATGA  
 CCATGTCAAGCTGTCAGACTCTGNGAAANTANTGCATGCTACNGGCAACCCGGCNTCCCTGATGNCCG  
 CNTGATTTTGGACNTAANGNGGACATGAAAAATGCCACAATTGGGGGNATGGGAGGGCCNCCCCCCCC  
 CCNTGGGTGTATGNCNATGGNCANGGGGTTTNGGTAACCTTTTTTGGTTTTTNGGGAATTTGAAANGCCC  
 AAAAAAACCACCGGTTGNTTTCTTTTGNAAAAAAAATTTANNGGGGGGGGGCCG  
 45 GNCCCCGAT

TTTGAAACCAGTTGGAGCTCCCCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAG  
 GCAGGATCAGNGAGNCCAGGTTGCANNTTTTNNNNAANGANGATNNANNNNGGNATGGNTTCAA  
 50 AGANAACCTGGCANTACNATCTGGTACAACTCCANGAGAAGACATTGGAGAAGAACCAAGCTGGGTCT  
 ATAAGAAGCAAGCTGGGTCTATGAGAAAGTGNNCNTAACNGTATNNNATNTTNAAGACAACCATAT  
 CACAATGAAACCNCTGACTANTGTAANGCTNGNTCCATGANGNTNTNTNTCACTATCAGNCTGAGACC  
 NAGGAATANATATAAAACGNTGCAAAAAAANATNGGGGGGGGGCCGNNTCNANTC  
 GAACNTNGGGGGTGTATGGNNTAAAGGAAACNNTTTCNTANATNGTTGNTCTTCNANNGTTTTTAAAC  
 55 TTTGANNATATTNCTGCNNNTTTACTTTCNGAATTNGAANCTNANTTTTTGCTTNTTGGCCNCAA  
 NCACNTNNNTTTTNTTTAAGTGGNTNTTGTNTTNTTANAAAAANNTTCGANNNCNATTTTGGNTGGN

NTTTTTCTNNCNTNTCCNCTGACTTGTCCNNNANATNTANATCCTNNTTTTTNTNNNTNNNGTTGGA  
TCTTTNNCCTTNTNNNNCGNNTTNTTGGGGGNNTTCTNTTCCCTANTTANTNCCTTTNNNTACNNGG  
NTTCTCNNTNNNNTTNTTNCNAANNNTNNNCTNTTTATTNANTNTNTTANTTTCNNCTNTTGGNTCT  
NTNNCTCTAANNGCAGTNTNAGNTTATNCNNNTTGCNTTTTNNCTTTCNNTTATCNNTNAGANCTTT  
5 TCTTTNNNTNNTTTAGTNTTCTNANNTCTNGTACTTCTTTNTTNTNTNANTNTTTACGCATTTTIN  
TTNNCTTCNNATACNACNTAGANTCTCTNNTCTCCNCTNNC

GCCTATNTGGAGCNGCATNNCAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
10 CGGCACGAGGAAGTCGTGGTGATGGAGGGCCCCCTGGGGCTACTGGTTTCCCTGGTGCTGNTGGACGG  
ACTGGTCCCCCTGGACCCTCTGGTATCTCTGGCCCCCTGGCCCCCTGGTCTGTGCTGGTAAAGAAGGG  
CTTCGTGGGCCTCGTGGTGACCAAGGTCCAGTTGGTTCGAAGTGGAGAGACAGGTGCCTCTGGCCCTCC  
TGGCTTTGTTGGTGAGAAGGGTCCCTCTGGAGAGCCTGGTACTGCTGGGCCTCCTGGAACCCAGGTC  
CACAAGGCCTTCTGGTGCTCCTGGTTTTCTGGGTCTCCAGGCTCTAGAGGTGAGCGTGGTCTACCA  
15 GTGTCGCTGGATCTGTGGGTGAACCTGGCCCCCTCGGCATCGCAGGCCACCTGGGGCCCGTGGTCCC  
CCTGGTAATGTCGTAATCCTGGCGTCAATGGTGCTCCTGGTGAAGCCGGTCGTGACGGCAACCCTGG  
GAATGACGGTCCCCCAGGCCGCGATGGTCAACCCGGACACAAGGGGGAGCGTTGGTTACCCCGGTAA  
CGCAGGTCTGTGGTGCTTGCCGGTGCTCCTGGCCCTTCAAGCCCTGTNGGTCCCGTTGGTAAACAC  
20 CGGAAACCGTGGTTGAACCCGGGTCTGCCNGNGCTTGTGGTCCCTGCTTGGTGCCNTTGGCCAAA  
AGTCCCAGTGGCCCCCAAGGTATTCCGAGGNGAAAANGGAAAACCTTGGTGATAAAGGTCCCANAGG  
TCTTNTCTGGCTTAAAAGGACACAATTGGGTGTNGAAAGNCTCCCGNCTTGTGCTGGCCATNAATNGN  
NANCAANGNGGCTCCCCGNCTGGNNNGTCCCCTTGNTCCCAANGNCCCTTTTGGTTCCTTTTGGCC  
CCTTNGCAAAAAGAAGGTTNTATTNNNCAANCTNGNGNNNTNAGCNCN

25 NCAANCTGGACTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
GGCAGGAGGAGGTGCAACTTCTTCGGTCTGCCGAATCCGGGTTCATCCGACACCAGCCGCTCC  
ACCATGCCGCCTAAGTTCGACCCCAACGAGATAAAATGTACCTGAGGTGCACCGGTGGGGAAGTCGGT  
30 GCCACGTCTGCCCTGGCCCCCAAGATCGGCCCTCTGGGTCTGTCTCCAAAAAAGGTGGTGATGACAT  
CGCCAAGGCAACTGGTGATTGGAAGGTCTGAGGATTACAGTGAACTGACCATTGAGAACAGACAA  
GCCCAGATTGAGGTGGTACCTTCTGCTTCTGCCCTGATCATCAAAGCCCTCAAGGAACCAAGGGA  
CAGAAAGAAGCAGAAAAACATTAAGCACAGTGGAACATTACTTTTGTGAGATCGTCAACATTGCC  
CGGCAGATGCGGCATCGGTCTCTAGCTAGAGAACTTTCTGGAACCATTAAGAGATCCTGGGGACCGC  
35 CCAGTCTGTGGGCTGCAATGTTGATGGCCCGCACCTCATGACATCATTGATGATATCAACAGTGGCG  
CAAGTGGAGTGCCCCGCTAGTTAAAAACTGCAAANGAAAATAAAGGACCATTTTGACAACCAAAAA  
AAAAAAAAAAAAAATTGGGGGGGGGGGGCCCCGNCCCCAATTNCCCCCTTANGGGGGGGNNNNNN  
NAAAAANN  
NN  
NN  
40 NNN  
NNNNNNNNNNNNNNNNNNNNC

NCCNNATCTGGAGCTNCAACCGCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
45 TCGGCACGAGGAGAGGTGCAACTTCTTCGGTCTGCCGAATCCGGGTTCATCCGACACCAGCCGCT  
TCCACCATGCCGTCTAAGTTCGACCCCAACGAGANNAAAATGGACCCTGNAGGGNCCCGNNGGGAA  
AGTCGGGCCCNGGTCTGGCCTTGNCNCCNAAAAATCGGCCCTTNGGNNTTGNNTCNAAAAAAGCCGGG  
GANNACTNCGCCAAGGNAANTNGGGNNTGAAAGGGNCTGAGANTACNGNGAAACTGNCCATTCAA  
AACAGACCAACCCANATTGNGGNGGNACCTNTNGNTTGGCCNTNANCNTCAANGCCNTAAGGGAC  
50 CANCCANGGANCNNAANAANCCNNAACNTTANCCNANGGAAACNTTCTTTTNTGNAAATNN  
TAACATTTGCCNNGNGAANGCGGATTTCGGTTTTATACTATAAAAAANTTTNTGGANAACCTTNAAGA  
GAATACCTGTGGGACACCCGCCNCATTTNTGNGGCGTGTGNANNTGTTNTNGGGCGCGCCNCCTCT  
TNGANACNCNNTTTGNNTGNTATTTNNCAACAGTGNGCCCCCTGGCGAGNGTCCCCCTTCTNTTTN  
AAAAACATGNCGNACAGGNNGGAAATAAAAGNGNGNCCNTNTTTCNACCCCCCNAAAAA  
55 AAATNTTNNCTNNGGGGGGGGGGGCCCCGGNTTCCCAANTNTTCCCCTTTTTTNGGGNNGGGTTNTNT  
NTACNNCCNTTTTNTNCNCNNNATTTNATNTTTNCTNNANNNAANTCTCCTCTGCCNNTTCTTNGN



ANCANANCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGAATTC  
 GGCACGAGGGANANNATAATGTGNTTCCTTATTTTTTAGATANGNNCTTAAGATAGGTTTCATACTATC  
 CTTTGAAAAGAATTGACAACCTGCAAGAATGTNGTTCATACATATCATGGNAATTGCACAGTAAGGGA  
 GATTNTCATGTNGGATTTGGGGAACANTTGCATTANTTCATAGCCATACTTGATGAATNAAGNCACA  
 5 NTGGCTGACNTTGATNCTGAATNAATGGACCTAAATANNTTTGTATTAATGNACTCTTATCTAAAACTA  
 ATTTACCATAATTTGTTCTGTTTTTGAAAGTACAGGANTTGCCCTTTAATACTTGGTTCAAATTTGAGTAC  
 CTAACCTTTCACACGAGTATAGATTAAATGGCCAGATACATTACTTTTAGAAAGTCGTTATTATTGATT  
 TATTTTAACCCCAATTGAGACAAATAAAATATTGGTTATTGAAAAATGNCTTTTCTTTCCATTACTGGC  
 10 ATCTCACATTAGCCCATCTGAGGGGAAAGACAAAACCCAGCTCATTTCACTGGTGGGAGTATTTCTCA  
 TTTTACATAAACTCCCATTATACTCTNCATCTCTTACGAACTTACAGAGNTAAAAGAGACATTTAGTCT  
 AACAAAGAACCTGGTTTTTTTCTGGCTCACAGATGGTTNCCTATGGNGGGATACCCGCCNTTTTATTTG  
 ACCTTTAGCCTTTTCTTTTTTTANACNCTGGGNAAATTTGNGAAATTCTAACCTTTTCTAAGCATGGTTA  
 GGTTAATTTATCCNCTTTTTTAACTTAATTTTTTTAAGCCTTAACCTAAAAAAATTTTTTTNNTTAA  
 ACCTNAATAAAAANGGGTTTTAANCCTTAAAAAAAANACCTTAAAAANGGTTTTTTC

TTGNNCACCGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGG  
 AAGAACTCTGATGCAGAGGTTGCACCTTTTCCCAGATGAAGATATACCAGAAGATATTCTTAAGAATT  
 20 TAACAGAAGAGCTTCCTCAACCACGAAAAGTGCCAGACGCTAGATGAGTACACACAAGAAGAAAT  
 AGAGGCTTTCCCAAGAGTTTGGTCTCCACCTGAGGATTATCGGCTGTAGGAGGAAGAAAATTCAGAA  
 AATAACGGTGTGGTGTCTGAAACTCCTTCCTCAGGGCAGGATGAAGCAATAGCTGCCTTCTGGAAGGA  
 AGCCTGCTCTGGGGGCTGAAAGTTTGTGGGGAAAGGTCGGGAAGGGGTATCCCTTCATTAGGAAATTG  
 CAGTAAGATGTCAATTTATAGAATTGTTTTATTGTATAGTGCTATTTGAATGTTGGAAATGATAAGAAT  
 25 AAAACTGCGCCTTACTTCAAAAAAAAAAAAAAAAAAACNNTGGGGGGGGGCCCGCCCAATTCC  
 CCCTTATGGGNGGTGNCTTACACNCCNNNNNNNNNNCANNACTGGGNNTGNNNNNNNNNNNNNNNNNN  
 NNN  
 NNNNNNNNTNN  
 NNNNNNNNNCNN  
 30 NNNNNNNNTNNNG  
 NNN  
 NNN  
 NNNN

GCCTATNNGGAGCCGNANCNCAGTGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGAAT  
 35 TCGGCACGAGGATAGTTGAGACTTGTAAGACATTTATTTATACTGTGTGTCATGTTTTATAATTTATACATA  
 AAATGTCTGGTTGACTGTACACCTTGTTTTTGAAAGAAATTTATTCGTGAAAGGAAGAGCAGTTGTTATT  
 TATTGTGAGGTCTCTTGCTGTAAAGTAAAAGCTTTTTTTTTTTCCTTGNAANCCNTTNAAGNCCNTTCC  
 TTAATNCACTCNCTCATCNGNCTCCNTTCNTTACCTGNCGTTANACTNTTTTCCACTTTANCCANCT  
 40 NGCATGTGAGTTNCTGNCCTGTTAATTNATNGNATNCTCNGCTGCCNGTCTGNNCATNCCTGANCCCT  
 CGGGTTTNGTTNACAAGGAATCTNGACTGACCAAANGGCNTTATANCTNTGACTCAAATAGCAGGTCC  
 AGAGGATNCNTTTTTGAGGAANCNCNATTTCTGTTCTCNGGTNGGNANNAACATCGGNGAGGGC  
 AGGNGGNATANCAGGGTNGGGTTTCTAATCATGCCTTCTAANAGGTTNCANANCCAAANAATNGAG  
 NGATANGGGNGNCAGGACCCTGAAANAAGGAAAANGCTGTACATTCAACCTTATGTTAGGGGTTTCC  
 45 TTNAAGGNTAGTTTGTGTNCTTTTCACTAGTTTTTTTTTCCCAANTGNGCCNTGAAAAGGTATATC  
 AAAGCTTTNTNAGNCCANGGTTCTNGGCTTTTNAAAAACTTTTTTNNNGAGGCAATTTTTTATTINCA  
 AACATGGCAAGTAAAAAATAAANCNTTAAANNTNAAGTTTAAANCTTTTCTCCCTGGAAAGGNCC  
 ANTNGTTAAAAAAAGTTAATAAGNGGGTTTTTCGCAAAATAANGANGAGGGAAAAATTANAAAAATTT  
 TAAANNCCNNAAAAAAAAAAAAAAAAAAANT

NAAAACTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGAATTCG  
 50 GCACGAGGGGAAGACTTACCACGTGGGAGAACAGTGGCAGAAGGAATATCTTGGTGCCATTTGCTCCT  
 GCACATGCTTTGGAGGCCAGCGGGGCTGGCGCTGTGACAACTGCCGCAGACCTGGGGCTGAACCCGGT  
 AACGAAGGCTCCACTGCCACTCCTACAACCAGTATTCCCAGAGATACCATCAGAGAACAAACACTAA  
 55 TGTCAACTGCCCAATTGAGTGCTTCATGCCTTTGGATGTACAGGCTGACAGAGAAGATTCCCAGAGAGT  
 AATATTTCCAACCCAGAGAAACAAGCGTGGATCTCTGCCAAGGTCCATCCAACTGGAGTGGTGTTCG



CAGACCCCATGTTAGTGTGTTCTTTCTTAAGCCCTTTGCTCTGGAGTAACTTCTCCAGCTTCAGCTCAA  
 CTCACAGCTTCTCCAAGCATCACCTGGGAGTGTTCAGACTTTCTCATACATGGGAGCAGTAGGTT  
 ATCTATTCTTCAAAATATTCATGCCAATCAGTATTTTAAATGAAGTGATTCTAACTTGNGATTTGGAT  
 TGGGATCCATAGGGAAGCACATGCCCCAACCAAGATCCAAAATGTCTTGAAATGATATTACCAAATTT  
 5 TTAAGTAGGAAAAGNTACCTGAACACTTNTGCTTNCACCTAACTGACTGGGCCCCGAATANTGNANGA  
 AACAGCATGNCCCTTTGNACTGGGGNATTCAAAAAAAGCCCCAGTACTTCACTTTTTTCCAAANGAA  
 TCTAAGTAATTGGCCTAAAAAAAATCNTTTTTTNTAACCCGGGAATTTAATCAAATTTTTCCAGNNTT  
 TTTATTTGGGAAAAAAAATTTGGNNCTGGGAAAAANACCTTAANNNTGCCNGTTNNANAAAAAAGG  
 NAAACNNGGNNCTAAAATAANGGGGGGGGGGAATAATTTTTTTTAAACCCGG

NCNANATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGA  
 GAAGGTCTTCCTTGCCCAGAAGATGATGATTGGTTCGGTGCAACCGAGCTGGGAAGCCCGTCATCTGTG  
 CCACACAGATGCTGGAGAGCATGATCAAGAAGCCTCGCCCTACCCGGGCGGAGGGCAGTGACGTGGC  
 15 CAATGCCGTCTTGGATGGAGCCGACTGCATCATGCTGTCCGAGAGACCGNCAAAGGGGACTACCCCC  
 TGGAAGCTGTCCGCATGCAGCACCTGATTGCCCGNGAGGCANANGCTGCCGNCTACCATTTGCAATTG  
 NTCGAGGAGCTNCGTCGCCTGNCACCCATTACCANCGACCCACCGAANCTGCCGCTGTGGGGGGCCGT  
 GGAGGCGTCCTTNAAGTGCTGCAGTGGGGCCATAATCGTCTCACCAGTCTGGCAGGTCTGCACATC  
 AGGTGGCCAGATACCGCCCCCGGGCCCCCATCATTGCTGTGACTCGGAATCACCAGACAAGCTCGCCA  
 20 GGCCACCTATACCGCGGCAATCTTCCCTGTGGTGTGTTAAGGGACCCANTGCANGAGGCCTGGGCTG  
 AGGACGTGGGATCTTNCNGGTGANCCNTNNCCATNAATGTTGNGAAAAGGGCCAGGGCTTTTTTNA  
 ANAAAAGGAGAAAATNGGTCANTTTTTGCTNAACCGGGTGGGCGCCCCCTGGTTTTTCGGCTTTTAAACA  
 ANACCCAATGCGGTGTAGTTTCTTGTGCCCATGANGGGACTTCGAAGCCCCCTTTTTCCANGCCCCCT  
 NGTTNCCACCCCCTTTTTNCCCCAAAAACANTTCCNTTAGGCCCAANNNTTGCTTTNGAATNGCTTCANC  
 25 TTTGGGGGCTNGAATNGGGGGGCANCTGGTGGGGGTGGGANCACCCNANGGAAANAANAANGAAA  
 TAACCTTCTTGTGGAAANCCN

TTNNAGCCTATANNAGNTGTATNACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GAAACTACACTTGGTTACCAAGTTTGGGGTTCGAGATGTCTACGTCCCGGGCCAGCCGGTCAACCGCCGT  
 GGTGCAAAGAGTTGAAATTCACAAGCTGCGTCAAGGTGANAACCTTAATTTNTGGGNTTANNCNTTGNAG  
 GCGGANTNGACCAGNATCCNTCCCAAANCCNTTTTTTAAAAAATAAAACANACAAGGNCNTTTACNT  
 ANNACGNNNTCCAAAGGAGGCCNTGCGNAAATNGNTGGGNTGCAAATCGGGGACAAAGATCATGC  
 35 AGGTNAACGGCTGGNACATGACNATGGTCACACATGACCAGGCCNGGAAGCGGCTCACCANGCNCTC  
 NGAGGAGGTGGNGCGTCTNCTGGANACGCGNNNATCTCTGCAAANGGCCGNGCAACAGTCCATGCTG  
 TNCTANCANCTGCCAGGGGGCCCCGGCTGTGCCTGCCCGCCNTTTGTACAGNGACACCANTTNCACGCT  
 NTGTCTGCCTCTCATCCTGGCTTCTGCTCATTGNTGGGCCCCCNCCTCAAAAGGGCAACACGGATCCCT  
 GCCCCGTCTGATCCCCCTNCCCCTACTGCCAGGTCTTGTGGCACCATNTCTCCCTCTNGGATGCTGA  
 AGACTGGCAACAGGGCCTGGACCCGANTCACAATCANNCTGNAGTGACAATTTTGGGCCNCAAAANC  
 40 TTGGTTGCTTGGCCAAATATTCCCCAGGTNATNAGGGGCCCTTTTTTCTTGATACNCCCCCNCNTNT  
 TAAAAAACCCNNGGGNTTGGCCCCCTTGCCCTTTTTTTTAAANTTCCGNAGTNNCCTGTGCCCCCACTT  
 NTTTTTCTTTTTTTTCCCAAGAGGGGGACTTNTNTTCTTGGCAAAAAAACT

TTNANCAACAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GAATTCGGCACGAGGAAATGCTGAGGTGTAGACTGACAGCTTTAACTGCTGAATGCCAGGTTACAC  
 AGTATTCTTACAAAAAGGGAAGTCAGCCAAAGACTGATCTGATGGACCAAAATTTGGAATTTTAAAA  
 GCACCACTACTACTTTCCAAAATGATCAGCAGGTTAAACATGTTTCAGCAAGGTATAGTGTGAATCCAT  
 50 TAACCTTCGTCGTCAGGGTCCAGACCAGAACTACTTGTAGTTTGAATAGGTAGCCAGAATGT  
 GGTTGTGTGCTTTATGGAAAGTCAGCAGTGGCTGAGGCTTGGGTAAACAACCAAGTTTTTCANGGTT  
 GGNAAAACACTTCTTCCTTGTNCATATCCCCACCAGGCTTTAATTNAAAAATCTAAAGGNGGNCCGTN  
 ACCTNNGGTTTNGGTTTGGTTTTNAATAAAGNCNTTNGAATCNGGTTTACCTNGNTTTTTNAATATCTGNC  
 TTAAAGNAATCCTAAATCTTTTTAACCTNACCNTANTTGCANTTNCCTTGNANTTTCATGGACCAAGT  
 TGGCTTTNANTTTGGTCAAGGGGGGGGTTTGGTTTTGGTTTTTTTTTTGGCTTTTAAANTNAAAAACTT  
 55 TTGGTGGGCCAGGGAATCCCCTTTTTCCCCTTTTTGGAAAGGNCCTTTTGGCCANCCCCCCTGGTTTA  
 ANGGGCCCTGGAAANCCCCCTTACCCCGGCTTTGGAAGGGGTTATTTTTTTTAAANGGGGGCNCCCCAA



NNGCNGNCCNCCNTNCTCNNNNNNNNNNNNNNNNANNNNNNNNNCNCNCCNNNNNTNCTCCCCCTNCNN  
 TTNATNANCNTCNCNTCNGGGGNNNNNNNGTANNGTCTNTNCNNTTTGAGCCNANTGGAGCTNCACN  
 CNGTGGCGGCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGNTNCCAGGGAANCNCNGGTTATTT  
 GNNTGTAAGNTCACCNTTGGGGANCAAGCTNANNTGGTGNNGANGGNTGGTGCCTGGANCAAGTGN  
 5 TTTNTTTCCACNTNNTTNCNTATAANCNTTTATNCCNNTCNGGNTGACCTCNCCAAGGGCCNNGN  
 TGCATGCTGCTTGAGGATNAGTAGNATGTATGNAAATTNCAATNCTCTGTGACCACCCCTTGGTTCATG  
 AACCATCAAGACAGGCCGAGATTCTAGACCTAATGCATTGANNTGNGNCGTGTNGATGCATANTGC  
 GACCTCCAGTGACACTTGNGCCTATTGACGACANTGTGNGCCTGAAANCAGAGTAACTNAAGGCTGG  
 AGCNGGTCAAGTGAAGACATCCAAGTGCCTTNGGTGNANTAACCTTCGGGTAGNTGACNAANTCCGA  
 10 TCCTNCCACCNTACTANAGGGNCAAGTCTTTNGNNGATTTTGAATGAATGCNTGGTGGNANNCCG  
 GGCNATTGNNGGANTGAGGGANGNCAATGNNTTGANNNGGGGTGNAAANNNAACCCGAANGGGNAA  
 CACNAGCCTAGAGGGGGGNNCNAATNTTTTNGGGGGNAACTTCAATGNNNCCAAAAAATTNAAC  
 CCCTGNAAANTTNNGCTNCAAAAAATCTNTTANCAANTTNAANTTGTATTCTANNAGGGTCTAGGN  
 CNNGNTTTTNNATNAAAAANAANAANTTCGGGNNTGNGGTAACTTTTGTNTANAAAAANGAATGNTGC  
 15 GCCCANACCNNNGCTGGGATTNNTTTNNANGAAAAAATANNNCCGGNGGNTTCTNNTNNTATGGTG  
 CGGCTTNTTTTGTATTNNGANANTACTGNGGNAGNCTACAANGGNAANTTGACTCANCCANAACC  
 AGGGNCTCCCTTTTNTTCCANTTNCCTCCCTGTNCAAAGTGCACNNGTANNNACATGNACNTTGGGN  
 TNGNGCGCGCATTTTCCCTTTTNGNCNGGANAGGATTCTTTATCCCNCACTCTANNNGGTTGCAA  
 AAACNCCTCNAATTTTTTGCACATTTGNAGNGGGGGGAAGGAAANATAGTTNACCCTATTNTTGGAA  
 20 GNCGNTGCCNAAAGTNNTCACAACANAGAGATNTTCTCTNTGTGNGGGGGNGTNGTCNCCNN  
 NNCTTACCTATNAATNGGCGCTNNTNNTTTNNNNNNANGNAGCCNAAACNCTATTANTTACATTTCATC  
 GNTGNCTATNTCC

CNCNATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGAAT  
 TTCGGCACGAGGCGACCAAGTGACTAGACTGAAAGAAACTCATCCTTTGGGAGTCATGGCAGCTGATGA  
 AGATAACAAAGAACAAGTTCTTAAGGAATGTGAGCAAGCTGAAGAAATTATGAAAGATAAACAACAAAC  
 CAGAAATTAATTAGTGAAATTACAAAGGAAATATTGAGTTAAAGGAGGAGATCAAAAACTTGAAG  
 CTGAGTTACAGGAGACCAACAGGACCTCCAGATTAATGAGGATATTCTGAAACAAAGATAAAGTTC  
 30 ACATCTGTGGAGAATCCTGAGAGTGACAGCGAGTTTTAGATATCTCCTATTTCATGTCAAGTGAGTCA  
 AAGTCCCTTATGAGCTGCAAAAAGGACAAGCACTTATTACCTTTGAAAAAGAAGTTGCCCAAA  
 ATGTGATCAGAATGGAATACCATCATGTGCAGGTACAGAATGAAAATGTGATGCTCACGGCCAACCCA  
 GTTTCGTAAATTCAGGAGTCAAATTCAGGTTTACGTAGGAGTGTCTAAAATGAAAATCAACGTTAC  
 CGACATTCCTGATGAACTGCTNAAAGTCAGATGAGAGACAAGCTANAATTGAGTTTCTTTAAGTCT  
 35 CCCAACGGAGGCGGANAAGTGGAGTACCGTGGAGTTTAAACAAGCAGACCCNGAGCCGCCCTTTTCC  
 TTTTNGGGAAAGGGGAATTTCTTGNNAGAATTTTGAAGTGGAAAGACTNTCCTNTTTNTTAAAA  
 TCAAAACCTGGCCATAAAGGTTCCNGGTTTNTCCCTACNCCNAAAACNNCCCTTTGAAAAANGTTTA  
 GGGTTTTTTCNNGGAGTTTTNTAAAAAGGCCANNGTTTTTGGACTNGGACNTTAAACCCCTTTNAAAA  
 CCNCCNGGTTNAAAAAATTTTTAAANGGGTTTTTTTNTNCNTNCCCTTTTNNNGGGGGG

CAANANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCTCC  
 AGCAAAGAAGATAAAGCCTCAGACCCCCAACACATTTCTTAAAGGAAGAAGGGAGAACGAAGGGC  
 45 ATCCTCCCCATTCCGAAGGATCAGGGAAGAGGAGATCGAGGTGGATGCTCGAGTGCCAGACAATTCCT  
 TTGATGCCAAGCGGGGTGCAGCTGGAGACTGGGGGGAGCGAGCCAATCAGGTTCTGAAGTTCACCAA  
 AGGCAAATCCTTCCGGCATGANAAAACCAAGAAGAAGCGGGGAGCTACCGGGGAGGCTCCATCTNT  
 GTCCAAGTCAACTCTGTTAAGTTTGACAGCGAGTGACCATGGGCGTCTATGGCACAGCAAGGGTGTG  
 CCCACTCAACGTCCTCAGTGGACCTGGGAATCTAGGCTCTATCAGGGGAGGGTCTTGGTGAAGAGAG  
 50 CAGTTTANAATAGGTCTGAAGACTGCACTGTAACACCCCTCTAAGGTCCTTTTTTGTGTTCTGGTTTTG  
 TACAGATTTGTTTTTGTGAGTGTGGGTAGCAAGGACAAAGAGTGTTCATTTTTAAGAACAATTTAGTT  
 GTCATTTCCCTCCATGTTCTGTGAAAGTCTTCACTAGAGAAATTTGGATATTTTCTATTAAATCATTT  
 CTTATTGAAAAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAAATAA  
 55 TNNNGNNGGGGGNNNTTAAANN  
 NNNNNNTNNNNNNNTNN  
 NNN

TTTGNAGGNCCNCNTAGNGGANGTTCGTCATTACAGTGGGNTGGACGNTTTANAAGTGGGGGCATCN  
 CCNCGGNCTTGGAANGTAAACTTACACCCNGTCTCCTTTNTTTTNNCGTCTATTATNNTTTNNATNNNC  
 5 NANNGGGGGCINTNTNATTNNTNNTTCTANANATANCCTCGAAGCTTNACTCTTTTNNNTCGNGA  
 CANNATNTNACNGGNCGGAAAGTANACTTNTATATNCNTGATGANCTCTTAACTTTTATNCNATGAGT  
 NGTTATNNTGTGTTNCTATNTNAAATTCATTANGCANNNANTCANATTANNTCTNCACTAACGCNTAN  
 ANCANTNAGTACCNTGCGGGCTNCTNTTAANACTCGACCACGNGNGNAATNCNGNANAGTGNAGNN  
 TCNTNTTGCTNAGAAAATTTGCGTGNGNCTTGNNAAGAATTCTGGGGNGACNAAGAATCANTNTCA  
 10 AGAGCTGAAATCGGTTTGCNNGACANTAGACTCANTGTGTTNACTNNNNTTGNANCTACNGTCCCNGG  
 NAANNNGCAGATTTNACACATNGGCTGCTTCGGNNAGGTAGGGTTGTNTGTNGTNTTGCNTTGGTT  
 NGAACNACAGGGCANNATTANGCNTTGGCNTTNAANTGNCCNTNNNAGACCNTTACCNATTANTNTT  
 NTNTAAANTANNTATNNTNGAANGTTGNNTCNCCTNGATTGNTTNACTTTGTGNTCTGTATNCCTTCTN  
 TNACAAGNNNNCNCCTACCNTNNTTTTAAACNTNTTTGTGATNATGGGNNNNNTNCAATTNCTNNATTTN  
 15 TTTTNTCTTTATTTNGTTNGNNNNNNNANTNANTANTGTNNATNATCNTGGANANTNNNTANNTNTGGA  
 GTTNANNTNGGTTTNNNGTTTCGTGATCINTNTCNTNATNNNNCNTCTTNNCNTNTATACNNNATNAGA  
 AGTNNANNATNTACACNNATCCTTCTTTCCTCCTCNTTTGGGAATNNCNTTGANGGTACTTNGTGAAA  
 AACANTNNGNNTTTTGGTNAGNNCCCNGNGTTNNNAATNTCTANNCTCNATGNTTNNGTGNNNCTNA  
 GNTNNNNNTANGAGGTANTGACAATAANNTAATTTGTNTCACNATTGGGANTNCNANTATGNNNTTTAT  
 20 NNTTNTNNTNGGNNTTTNTTNGTNTCCGTTANNTATNTACGTANNCCNGAGTTTNTCNCNGTNGA  
 ATTCNNTCTGNTGNTANTATNANNNGGGNTTATGGGNCCTCCCTTGGNGCANNANTGGGTATANTCNGNA  
 AANNNTTGCCNGNTGNTGGGNATNTGTGTGCCGCCTAAGNGNCNTTTTNTACGACTNCTCNATATTTN  
 NTNGCCTACNAAGGGTGTNACNTTGNNGTATTNNANTTGTGANTCTTATATGNTNANCANNNG

TTTGNAGGNCCNCNTAGNGGANGTTCGTCATTACAGTGGGNTGGACGNTTTANAAGTGGGGGCATCN  
 CCNCGGNCTTGGAANGTAAACTTACACCCNGTCTCCTTTNTTTTNNCGTCTATTATNNTTTNNATNNNC  
 NANNGGGGGCINTNTNATTNNTNNTTCTANANATANCCTCGAAGCTTNACTCTTTTNNNTCGNGA  
 30 CANNATNTNACNGGNCGGAAAGTANACTTNTATATNCNTGATGANCTCTTAACTTTTATNCNATGAGT  
 NGTTATNNTGTGTTNCTATNTNAAATTCATTANGCANNNANTCANATTANNTCTNCACTAACGCNTAN  
 ANCANTNAGTACCNTGCGGGCTNCTNTTAANACTCGACCACGNGNGNAATNCNGNANAGTGNAGNN  
 TCNTNTTGCTNAGAAAATTTGCGTGNGNCTTGNNAAGAATTCTGGGGNGACNAAGAATCANTNTCA  
 AGAGCTGAAATCGGTTTGCNNGACANTAGACTCANTGTGTTNACTNNNNTTGNANCTACNGTCCCNGG  
 NAANNNGCAGATTTNACACATNGGCTGCTTCGGNNAGGTAGGGTTGTNTGTNGTNTTGCNTTGGTT  
 35 NGAACNACAGGGCANNATTANGCNTTGGCNTTNAANTGNCCNTNNNAGACCNTTACCNATTANTNTT  
 NTNTAAANTANNTATNNTNGAANGTTGNNTCNCCTNGATTGNTTNACTTTGTGNTCTGTATNCCTTCTN  
 TNACAAGNNNNCNCCTACCNTNNTTTTAAACNTNTTTGTGATNATGGGNNNNNTNCAATTNCTNNATTTN  
 TTTTNTCTTTATTTNGTTNGNNNNNNNANTNANTANTGTNNATNATCNTGGANANTNNNTANNTNTGGA  
 GTTNANNTNGGTTTNNNGTTTCGTGATCINTNTCNTNATNNNNCNTCTTNNCNTNTATACNNNATNAGA  
 40 AGTNNANNATNTACACNNATCCTTCTTTCCTCCTCNTTTGGGAATNNCNTTGANGGTACTTNGTGAAA  
 AACANTNNGNNTTTTGGTNAGNNCCCNGNGTTNNNAATNTCTANNCTCNATGNTTNNGTGNNNCTNA  
 GNTNNNNNTANGAGGTANTGACAATAANNTAATTTGTNTCACNATTGGGANTNCNANTATGNNNTTTAT  
 NNTTNTNNTNGGNNTTTNTTNGTNTCCGTTANNTATNTACGTANNCCNGAGTTTNTCNCNGTNGA  
 ATTCNNTCTGNTGNTANTATNANNNGGGNTTATGGGNCCTCCCTTGGNGCANNANTGGGTATANTCNGNA  
 45 AANNNTTGCCNGNTGNTGGGNATNTGTGTGCCGCCTAAGNGNCNTTTTNTACGACTNCTCNATATTTN  
 NTNGCCTACNAAGGGTGTNACNTTGNNGTATTNNANTTGTGANTCTTATATGNTNANCANNNG

TTNAAAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 50 AATTCGGCACGAGGTCCTNGTCGTNGCTGAACCTTCCGGAACCGCAGCTGCAGCCGCAATGGCCCCAC  
 CCTGGGTGCCTGCCGTGGGCTTCACGCTGTTGCCAGTCTGGGGGGCTTCCTGGGNGCCCAGAACACC  
 CGAGGANANGGTTTCCANATGGTACGCCAGCCTGCAGAAGCCCCCGTGGCACCCGCCCGCTGGATTCT  
 TGGCTCCCATCTGGGGCACACTCTACTCGGCCATGGGGTATGGTTCCTACATGATCNNAAGAGCNG  
 NNGGGNTNTTTAANGGAAGCGNTGNTTNCNTGGGCNTNTACGNTNNNCAANTGTCTCTGAAGTGGGC  
 55 ATGGCCTCCCCNTTCTTCGGCACTCGACAAATGGGCTTGGGCCTTGGTGGATCTCCTGCTGACTGGCG  
 GCATGGAAGCAGCCACGGCAATGGCCTGGCACCANGTGAGCCCGNCGGNTGCNTGCCTGCTGNACC

NGNACCTGGCCTGGCTGNCCTTTGCGGCCATGCTCAACTACCGAATGGGGNAAGACAACCAAGTCCGG  
 AGGAATGGCCGGCGGNTTTTCGGAATGAAGAACCCCTTNCCTTCCANGAATTGCAACCCGTTGNGGG  
 TCAAGGCACTTGTGGGGGGGGNCCCCAAGGCTTTCCGAANNCACCAAGGCCCGCTTGTGTTTGTNT  
 NTTAANCCAGGGGGNGAACCANCAATTTCCAAAAGGGGCTTCCTTNTGAACTTGAAACCCCCCAACCC  
 5 CAAAAAAAAGGGNNCTTGGGCCCTTTAANCCCTTGNNTNAAAANTTGGTTTTTNAAAAACATTGGAA  
 ATTTTNTTTAACCACAAAANAAAAGTGTTTTTAACCTTTAAAAAAGGNAAAAATTTGGGGGG  
 GGGGGCCCCGGNNCNAATTTTTCT  
  
 10 AAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGNANGA  
 NNAACNNNGCCCTGCCCAAGAAACAAANGCANAATCGTCCCATTCTCAATGGATTGGAATGAAAAC  
 TGGCAATAAAATCAGGTACAACCTCAAGAGAAGACATTGGAGAAGAACCAAGCTGGGTCTATAAGAA  
 GCATGCTGGGTCTATGAGAAGTGGTCTTAACATGTAGACCACCTTTTTTAAGCAGCCAGATCACANTGA  
 AACATCACTACTGTAATGCTCGGCCCATGATGTTATTTCCCTCCTNTCAGGCTGAGACCCAGCATTAATA  
 15 TAAACGGTNGCAAAAAAAAAAAAAAACTNNGGGGGGGGGCNGGACCCAGTTTNCCTTNTGGGN  
 NGTTGAANNCAANTTGCNAAAGAAGCCTCNATAANNTCCTTNAAGANTACNGGNGTCCNTCANNGGG  
 GAACTTGGAGAACAANANCNCAANGGGNNNTAGCNTTTTTGAACNNGGCTTNGCNAACNAATTAAN  
 CNCNTTCTTTGGTAATTTTAAAAACCAANTNAATTTTTTTTTNTTGGGGGAAAAACATTAATCCCCNTNGG  
 GTTGGGNTGGNNNTGNNTGGACTTANCGGGGAAGGGATTGGTGTAAACCCCATATTTTGAATTTTTNT  
 20 TTTAAGGGTTGGTTTCAAAAANAGGGAAAAAANGNGTTANCAAAANNTCNCCANNTTCTTTTGGAN  
 AAAAAANCNCCCTTNNCNCNNTAANCNGGNCNNGGGTAATGGTTTTTTTTATCCCNCCNAAAACCC  
 AAGGNTTTTAAACNTTTTTTGGNCCCTGGNNGGGNAANTCCCNNGNNCTTTTCTTTNNTTTTNNANCNN  
 TNGNTTNAANTTNGGACCNNGNGGGCTTTGGTTTTTTTNAAAAAAACTTNTNCTTTGGGNGGGTTNN  
 NTTTAAAAATTAAACCCGGTTTNAANCCTTTTTGGGAAAAAAAACNT  
  
 25 TNNNNAACAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAG  
 GAATTCGGCACGAGGGGAGAATTCAAGTGTGATCCTCATGAGGCCACATGCTATGACGATGGGAAGA  
 CTTACACGTGGGAGAACAGTGGCAGAAGGAATATCTTGGTGCCATTTGCTCCTGCACATGCTTTGGA  
 30 CTGCCACGGGGCTGGCGCTGTGACAACTGCCGACAGCTGGGGCTGAACCCGGTAACGAAGGCTCCA  
 CTGCCACTCCTACAACCAGTATTCCCAGAGATACCATCAGAGAACAACACTAATGTCAACTGCCCA  
 ATTGAGTGCTTCATGCCTTTGGATGTACAGGCTGACAGAGAAGATTCCCGAGAGTAATATTTCCAACC  
 CAGAGAAACAAGCGTGGATCTCTGCCAAGGTCCATCCAACTGGAGTGGTGTTCGCAGACCCCATGTT  
 AGTGTGTTCTTTCTTAAGCCCTTTGCTCTGGAGTAACTTCTCCAGCTTCAGCTCAACTCACAGCTTCTC  
 35 CAAGCATCACCTGGGAGTGTTTTCAGACTTTTCTCATAATGAGGAGCAGTAGGTTATCTATTCTTCAA  
 AATATTCATGCCAATCAGTAATTTTAAATGAAGTGATTCTAACTTNGGATTTGGATTGGGATCCATA  
 GGGAAAGCACATGCNCCAACCAAGATACAAAATGTCTTGGAATGATATTACCCAAAATTTAAGTAG  
 GAAAGTTACCTGGAACACNTTNTGNNTTTCACNTTAACTGGACTGGGCCCCGCAATATTGNANGGAA  
 CCAGCATGGCCCTTTTGGACCTGGGGGAATTCAAAAAACAAGCCCCAGGNACTTCCNTTTTTTTCCAA  
 40 AAGGAAATCTAAGGAATTGGCCTAAAAAAAATTTTTTTNNTTACCCGGTAATTTAAANAATTTT  
 TTNCCCAANNTTTTTN  
  
 45 TTNAACAANNCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGT  
 TTGATCCCTGGGTGCGNAAGGTCCCCTGGAGAAGGAAATGGCAACCCACTCCAGTATTCATGCCTGGA  
 AAATCCCATGGACCGAGGAGCCTGGTGGGCTACAGTCCATGGGATCACAAGAGTCGGACATGACTG  
 AGCGACTTCATTTCAATTCATTCAAGCCGACCTTTGTCCCCTTTGAAATCCCTTCAAGCTTTTGGATGTT  
 CTTGGTGGTAACAGCATTAGATTTTGGGATATCTTTCTCGGATTCAACCTTGCATTTAATGGTTTTTGA  
 50 CATTAACAAAACGGATTCTTTAAAGGAAAGAAATTAAGTCTACCTAATTCTGCTAGGCACTCGTGCT  
 CCCTGTGTCAACCGTACTTTTATAACTATGGTAATGAAGTCAATAGATAGCAAACTAATTATTCCTTCC  
 CCCTTGTAATAATTGAGAAAACTTGCTAACAAGGAACTGAACTGTTATCTTGAACATAGTCCCCAGTC  
 TAGTTTTTGCCATGACTATAATGAATATAGTCATGTGGNTAATTTCAATTTCTTNGGTTAATTTCAA  
 AAGAATTCTCAGATCCCACAGTATAAANGGTGGAAAATTATGGTACCTTTTATGCTTGANAAAANGAA  
 ANTNGGGGGGTTAAACCCATTTNAAAGNNNCATGNAATCATGGTTNGGAAAAGGCATTTGGANTNCN  
 55 TTTGGAGTTATATATAGGAACCGGCAAGTTTTTGGAGTTGAATCCTTTTAAACATGCCGGACANAATA

AAAAACCTTNGTTTTGNNAAAANNNGGNCCCCCANTTTNNTNAAANGGNAAANNTTTNNCCNTTTGG  
CCTTTTNAAAACCAGNNNNNCCCCA

5 NCAAAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCG  
ACAGATAGCCGACTTCTGTGCTGTGCCAGCCGCATCCCTGAGACAAGATGGTGAAGGTGGAGTGAAC  
GGATTCGGCCGCATCGGGCGCCTGGTCAACAGGGCTGCTTTTAATTCTGGCAAAGTGGACATCGTCGC  
CATCAATGACCCCTTCATTGACCTTCACTACATGGTCTACATGTTCCAGTATGATTCCACCCACGGCAA  
10 GTTCAACGGCACAGTCAAGGCAGAGAACGGGAAGCTCGTCATCAATGGAAAGGCCATCACCATCTTC  
CAGGAGCGAGATCCTGCCAACATCAAGTGGGGTGTGCTGGTGTGAGTATGTGGTGGAGTCCACTGG  
GGTCTTCACTACCATGGAGAAGGCTGGGGCTCACTTGAAGGGTGGCGCCAAGAGGGTCATCATCTCTG  
CACCTTCTGCCGATGCCCCATGTTTGTGATGGGCCGTGAACCACGAGAAGTATAACAACACCTCAA  
GATTGTCAGCAATGCCTCCTGCACCACCAACTGCTTGGCCCCCTGGCCAAGGTATCCATGACCACTT  
15 TGGCATCGTGGAGGGACTTATGACCACTGTCCACGCCATCACTGCCACCCAGAAGACTGTGGATGGCC  
CCTTCCGGGAAGCTGTGGCGTGACGGCCGANGGGCTGCCANAATATCATCCCTGCTTTCTACTGGCG  
CTTGGCCAAGGCCGTGGGGCAAGGTATNCCTGAGCTCAACGGGAAGCTTACCTGGCATGGGCNTTCC  
GGGTCCTACTCCCNACGTGTTTGTGNGGATCTGACCTTGCCGCCTGGGANAAACCTTGCCAGTNTGAT  
GANANCAAAAAAGNGGNGAAAACAGGCGTCAAAGGGCCCTTTCAAGGGCATTNTAGGCTTCNCTGG  
20 AGGANCAAGTTGTTTCTTGNAATTNAAAAGNGACACNTCCTTT

ANCAANNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGC  
AAACTCCACCTGGACTACATCGGGCCTTGCAAATACATCCCCCCTGCCTGGACTCCGAGCTGACTGA  
25 ATCCCCCTTGCGCATGCGGGACTGGCTTAAGAACGTCTGGTCACGCTGTACGAGAGGGACGAGGACA  
ACAACCTCCTGACCGAGAAGCAGAAGCTGCGAGTGAAAAAGATCCACGAGAATGAGAAGCGCCTGGA  
GGCTGGCGACCATCCTGTGGAAGTGTGGCCCGGACTTCGAGAAGAACTACAACATGTACATCTTCC  
CTGTGCATGGCAGTTCGGGCAGCTGGATCAGCACCCCATGACGGGTACCTGTCTCACACCGAGCTG  
30 GCCCCACTGCGCGCCCTTATCCCCATGGAACACTGCACCACCCGCTTTTTCGAGACCTGTGACCTG  
GACAACGACAAGTACATCGCCCTGGACGAAGTGGGCCGGCTGCTTCGGCATCAAGGAGAAGGACATC  
GACAAGGACCTCGTGATCTAAAAGCCATGCCTCCTCCTGCAGAACAGATTCTCTCTCTTTGACTTTCC  
CCTTCTGTTTTTCCCAATGTTTAAATGGTTGGATGGGTGTTGTTGGTCTTGCCTGGGGTCAAGGGGCTAA  
TATAGACTTAAACGAATACCNNTAACCGGGGCTNAAACAGAACTTTTAAANCCAAGTCNCGAAATTN  
NTTAAGTGNNAACTNAACTTTTNCGGGCTTTTGGTTACCCATGAAANGGGCCCCGTTTTTCTTTTTG  
35 GCCGGGNGCCCCCTCCNCCCTTTGGNTTTNGGGGGGCNAATTGGGNGNGGAACACTTTNNNTTTGGT  
TNNNGTTTTNNCCNTTAAANACCAATTGGGNATTTTNNNAANATTTTNAATNTTTTTTNNNTNAAAA  
ACTAATTTTNCNCCCANNNCCNAAANTTTGGGTTTANTTTTTTTNNNGGGGGNNTGGGCG

GCCCTATANGGAGNNGNATNACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAA  
40 TTCGNACGAGGNTGNAATGTNCTNTNCNGACTGNNGNCCNCCNANGATANNANGGNAGAAGCN  
NACCTNGTGGNGCTTTGGGCCCNNCTGGGGACAANNCTAGCCCATNCNTCACTCTATTGNNACTCTT  
NCAGGGCCTGGAANCCCTTGNTCCTATNTTCTNCTNGNGCTAGGGGCCTGNGCTTNNCNANNCNGCN  
GGAAAANGGANNGATNNACCCAGGGNGANNNCNGGAAATCAAANCTNANTGGAAAANCNTNGCCCN  
45 NNNCCAGGNGNGNAATTNNGCCTGNANACTGGNNGACCATGATGACNNTGAGGNTGTGGTNGNNAG  
CCACNAGGGCCTTCANNAGNATGNAGNNGTGGTTTTACNCGANTGCCNGGGCTACCAGTTTTTTC  
AAATATGTNNATTGNTGCCGTNCCCCCNCCCTTNNNTNNGGTNNATANANNNNCTTNTGTNCNACNN  
CNACCNTNCACANAGAGATTAAACNNAAGNCTTANTGTCCCNANAAAANTGNTTAAANCNCCNGGAG  
CAAGGTNCNTNCNATNGACNATTTTTTCCNATTTNGGNAANGGTTCTTATANATCCNGNTGTNCT  
CCTTCTTTTTCATCTNGNCATNCCAGATANTACNTGGTNGATGGGNCCCCCTTNNCANNTNNCT  
50 NTTTTNGCANACCANGATCNGTNNNGNANTNTTCAAAAACANNCATTCCCTNATTTNNANTATTNT  
TNCTNGCNNAANATCNNTNTNTNNAATNGNNNATTCNTCNTTTACCTTNNANNNGGNTAATTATANN  
TTGGGCNATGTGTTTCTTNCCTGNCGACCNNTNCAACNTNNCTGTAATNATNTTTTANTTNGGTANTNTT  
ACATCCNNCANNTNTNTTAAATANNATNCNNTGTCCNANTTNATTAATNNNTATTNNNACTAAANTATN  
55 CNNTCAATTCNTNCNTCCG



TTNAGNCCTANNNTGNNTCNNTNTNNAANGNANNACNCTNTAGAACTAGTGGATCCCCCGGGCTGN  
 AGGCAANCNGACACNAGGNNNTTCTGGGNCANTAGCAAAAGTATCCCTNTTTAGGGGNATNTNNATG  
 GTNNGANTNGAANNNGGTTNAAAACGATNNGAACGNCTTGNTCTAAAAGGCTNGGNNNCANNNNCCG  
 GAAAANNGACANANCCTANCTNTTTTGNNTNGCTTAANCNACNTNNTTTNAANCTAAGNCNNGNCNN  
 5 NTTNANNTNCCNCNAGGGNATNGNGNCANNANNGTNCNANAGNAANAGATCGGCATTNNNTAT  
 ANCNGNGNGANNNGCGTCNATCCTATTTTTTGTGNNGGGCNAAATGGNGTGACAANNTAGNNNGGCN  
 NATGAANGGCCTCATTNATANNTNGGNANTCACAACAGGGGTANNTTTTNTNGTNNNTNNGAANCTNG  
 NTNGCCCATNNTTGNNAAGNGTNTGCTCCAAAANANTTATAAAANNTNNTNACNACGCNCTTTGNGC  
 GAGNGTCCCCCTTANTTNTNTNGTGTGTCNGGNNCTNTGCAACNCNCNNAAGTAANTAANNAAGANCTC  
 10 TCATNNNTTAGNNNNCNANATTGNCATATNNTNNTCTTNTNATCCCTAATCTCTATGNANNNANCCANN  
 NTNCTCANNATTNTTCCAAACAATTCCNCTTTTTNTCNNTTANCTCNTCGNNANCCATNTNTNCNANAA  
 GTAGTCGNNGATNNNATTATTNCCGCNCTNNGNNGATNNTAGTTGNGTNTNTCNNTNNTNNTATTNG  
 AANCNNTCNTTCATTTGACTCGCCTNNATNTNNTNTAGCCTTACTTANGAACACNTNAACTTTCTTNAC  
 TNTATTCTCNTNTTTTNCGNCNATGGCTGCTCNAANACCNTNTCTTTCTCNAATGACANNANTCGGN  
 15 NCANATTTNTATTAGGTNNNTTACNCCTNGTNNCNCCTTTTAAATCTNTTTNTCNNTNNTNANNNNCTN  
 GGATCGACNCTCGCTTTNNNTGNCAAAATCCNCTANTTTNNNCCCANATCCNCGCNCNTNNNNCANAN  
 NGTTNATNNNTATTNAGANNTCCCNNAACATNTNTNCNCG

TTNAGNCCTANNNTGNNTCNNTNTNNAANGNANNACNCTNTAGAACTAGTGGATCCCCCGGGCTGN  
 AGGCAANCNGACACNAGGNNNTTCTGGGNCANTAGCAAAAGTATCCCTNTTTAGGGGNATNTNNATG  
 GTNNGANTNGAANNNGGTTNAAAACGATNNGAACGNCTTGNTCTAAAAGGCTNGGNNNCANNNNCCG  
 GAAAANNGACANANCCTANCTNTTTTGNNTNGCTTAANCNACNTNNTTTNAANCTAAGNCNNGNCNN  
 25 NTTNANNTNCCNCNAGGGNATNGNGNCANNANNGTNCNANAGNAANAGATCGGCATTNNNTAT  
 ANCNGNGNGANNNGCGTCNATCCTATTTTTTGTGNNGGGCNAAATGGNGTGACAANNTAGNNNGGCN  
 NATGAANGGCCTCATTNATANNTNGGNANTCACAACAGGGGTANNTTTTNTNGTNNNTNNGAANCTNG  
 NTNGCCCATNNTTGNNAAGNGTNTGCTCCAAAANANTTATAAAANNTNNTNACNACGCNCTTTGNGC  
 GAGNGTCCCCCTTANTTNTNTNGTGTGTCNGGNNCTNTGCAACNCNCNNAAGTAANTAANNAAGANCTC  
 30 TCATNNNTTAGNNNNCNANATTGNCATATNNTNNTCTTNTNATCCCTAATCTCTATGNANNNANCCANN  
 NTNCTCANNATTNTTCCAAACAATTCCNCTTTTTNTCNNTTANCTCNTCGNNANCCATNTNTNCNANAA  
 GTAGTCGNNGATNNNATTATTNCCGCNCTNNGNNGATNNTAGTTGNGTNTNTCNNTNNTNNTATTNG  
 AANCNNTCNTTCATTTGACTCGCCTNNATNTNNTNTAGCCTTACTTANGAACACNTNAACTTTCTTNAC  
 TNTATTCTCNTNTTTTNCGNCNATGGCTGCTCNAANACCNTNTCTTTCTCNAATGACANNANTCGGN  
 35 NCANATTTNTATTAGGTNNNTTACNCCTNGTNNCNCCTTTTAAATCTNTTTNTCNNTNNTNANNNNCTN  
 GGATCGACNCTCGCTTTNNNTGNCAAAATCCNCTANTTTNNNCCCANATCCNCGCNCNTNNNNCANAN  
 NGTTNATNNNTATTNAGANNTCCCNNAACATNTNTNCNCG

TNNNNAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 40 AATTTCGGCAGCAGGCCCCCTCCCCCGAGCGCCGCTCTGGCCGCACTGCGCTCGCCCTGAGCTCCGGGC  
 TCCTGCTAAGCCAGCGCCGCTGTGCGCTCCCTCCAGTCGCCATCATGATCATCTACCGGGACCTCATT  
 GCCATGACGAGATGTTCTCCGACATCTACAAGATCCGGGAGGTGCGCGACGGGCTGTGTCTGGAGGTG  
 GAGGGGAAGATGGTCAGTAGGACAGAGGGTAACATCGATGACTCGCTCATTGGTGGAATGCCTCCG  
 CTGAAGGCCCCGAGGGCGAAGGTACCGAAAGCACAGTAATCACTGGGTGTCGATATTGTCATGAACC  
 45 ATCACTTTGCAGGAAACCAGCTTTCACAAAAGAAGCCTACAAGAAGTACATCAAAGATTACATGAAGT  
 CAATCAAAGGGAACCTTTGAAGAACAGAGACCAGAAAGAGTAAACCTTTATGACAGGGGCTTGCA  
 ACAAATCAAGCCCACCTTGTTAATTTCAAAAACATCAGTTCTTTATTGGTGAAAAACATGAATCCA  
 GATGGCATGGTTGCTCTGCTGGACTACCGNAGGAGTGGNGTAACCCCATATATGAATTTNTTTAAGG  
 50 ATGGGTAAAAAAATGGGAAAAATGTTAACCAAGTGGCAAGTTACNTTTGGAATCAAATCACCTTGT  
 CGGCATAAACTGGCTNGGCTACTGGGTTTTCAATCCCCCACCACCAGGACTTTAAACAGAANGGGA  
 ACTGGATGTCAATTCTCGAGCTTTTANTTTGGTTTGAACCGTTGANTTAATTTGGAGCGGGNGGCCTTT  
 GTTTTTTGANAAAAACGGGTCATGGGAGGGTGGCTTAAAAANAAAAACNCCTTTTAACTTCNTTGGN  
 AAAAAAAAAAAAAA



AANAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATNCCCCGGGCTGCAGGNANGA  
 TCNANCNNGTCCTGCCCAANAAACAAANGCNTAATCGGCCCATNNGGTTAATGGATTTCGNNATGAAAA  
 CTGCCAGNTATAATCAGGTACAACNTCANGAGAAGACATTGGATAAAGAACCAAGCTGNNCTATNAT  
 AAGCANGCTGGGTCTATGANANGTGGCCTTAACATGNAGACCACCTTTTTTTAAGCANNCANATGACAT  
 5 TGAAAAACNTCACTTACTGNNNTGCNTCGGCCCATGANGTTATTTCCCTACTATNAGGNTTGAAACCCAT  
 CCAATAAATNTAAANCCNNGGCAAAAAAAAAAAAAAAAAANTCCNNGGGGGNCCCCCTNNCNCANANA  
 NTCCCTTAAAGTAAAATTGTTTANANAGANCANTCNATCTTGNGGCTTTTNTTTNCCNCNTNNGCAATN  
 CATNCANGNNTNNCCCCCNTTGGNGGNNTTTTTNCNTTATANNTCNTNCNNNCTTNGGGGCTNNTCT  
 CGNANTTNTCTNTNNTATNCCANTTNTTNTCCNTNAGNCTAAAAAANCATCCNTNTAAANCCNNAT  
 10 TANAAANNCACACTNNGNNANCANTTTATACNNNTCNTCACTCGGAANGAANNCTTNTTATTTTTNTT  
 TTAACGNCAATATTNNNNNTNNNTCCCTCTATTTCATNNGGTTAGGANTCTTATTATAATTCTCTNTTNG  
 TNCCNCCNGAGANNNACTATTNTNNNTCTCAANTCNNNCTTCTTANNCATNTGTTTCNNNNCNCNTATT  
 TTTTNTTTCNGANGGANNCTTNNCNCNTCCTTNNATTNTNTCTTAAATTNNCGNNNTNATTCTTATTTC  
 TCGCTNNCANACNNNCNNAGAGACTANCTTTTATCTTTATTCTNTTCTCNCNTCATTANAANNCTTCATT  
 15 TTTCTNTNCACTTCATTANTTNGTTGNGNNTCTTCNNCTCTCTTTTACNNATGTATTCTTNANTNTNN  
 GNCTGNTTNTCTACGNTNGAACNTCTCCNNCNTCCNCG

TTGNANACAATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAG  
 20 GAATTTCGATATCAAGCTTNTCNNTACCGTNGACCTGGANGGGGGGGCCCGGTCNCAATTCGNCCTATA  
 GNGNNNCGGANTACAGTGGGAACGGCGTCACAATGATGACTGGACGGCAGGGCCGAGCTACCTTCCA  
 GTTCCTGCCTGATGAGGCCCGGAGCCTGCCGCCGCCGAAACTGACGGACCCGCGGCTGGCCTTCGTAG  
 GCTTCTTGGGCTACTGCTCCGGCCTGATTGATAACGCGATCCGGCGGAGGCCGGTGCTGTTGGCCGGTT  
 25 TGCATCGCCAGCTTCTATATATTACTTCCTTTGTTTTTGTGGATATTATTTTTTAAAAACGTCAAGAC  
 TATATGTATGCTTGTGAGGGACCACGATATGTTCTCATATATAAAGTCACCATNCAGAGGATTTCCCT  
 TAAAAAAGATAAGAAAAAAGTACGGGGGAAGNTTTTGAAGAAATCCATCCAGGGGGCGTTGAAGTTC  
 TTNCAAAATGGTTTTGCTTCCCGGTTTAATTGATACAAGTTAATTTCTGNAATTTTNGGTGGAACCTGG  
 TTTCTTATGAACATCTTNAAGTTTTATGTTTNTNTTTCTTTAAACCGTTTAAACCCCTTGTGATTAA  
 30 AAATTGGTCNATNTAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAA  
 CNNTNTTTTTTCCNTNTNTTTGGGANGCTCCNNNNNATCCNCTTNTTTTTCCCTCNNNTTCTNTACNTC  
 TTNTCTNTTCTTNCNANCCNCNATNCNTCTTGTCTNTNTCTNCNTACTCTTTTNTTNTCNCNNCCNTT  
 TTNTCNCNTTNTACCNTNNNNATNTNTNNNNCCNTTANTNNATNTNTCNCNTGTCTCTNTNTTTTTTN  
 TNATTCTNTCACTTTCTCCTTCTATCTNTCATCTCNCCTCAATTACNNCTCTTTTANCANTTTTCTTTTT  
 35 NTNTNCNATTNTTNCCT

TTGAGNCCATANGGAGNTGCANNNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAG  
 40 GCTGNTGNGGNATNTGGAACANNTCGNTGTACTGAGGCNCGGNCGCTGANGCCTCANGGAGGGCCT  
 GAAGGGACCCCGGCAGCGCCCCCGGAGTGATCCAGACACTTCCAANAAGGGGCCGNCGCCACCTGT  
 GTATATNACCTCCTGGTACCACTGCTACACTTANCANCTTTTTTACTTTTGGAGGCTTTGTNNATGTCCTG  
 AAGCTGCCTGNNAATTGTCCTTTNGGGGCTGACGTACANTGTANGGGCCNTGTGAGTGGGCCNNGGGG  
 ACTGCAAGGCANGGCCCCCCCTTNTGNTGNTNGNGGGCTCTGCTTGTCTATCCAGGCCTCTCCTGGGGG  
 45 CCACCCAGNCGCCGCCANTCCAAGTGCACCCACGCGCCCGTCCCATGAGCGACACACACGGCTCAGC  
 CTTTTTTTAAACNTGATCCTTTNNCGGCCACCTCGCTNTGGAGCCGNGTCTACCAGCAGNCTTATGCC  
 TTNAACNCGCACCTTTCNTTTNTAACGCTTTAANNTTAAATTGTGATTNCCATCTTGGAAAAGTCTTCA  
 ATAAAAGANNNGAAAAACCCAAAAAANAANAAAAAATTTTGGNGGGGGGGGNACCCGATCCCC  
 CNTTTGGCCCNNTAANGGGGGATNTCTTTNTANAAANTNGTAGGNAAANAANNTTNNGGNNNNNGCTN  
 50 AAAACTTTTAAATNNGGNNGNANTTNNNTANAAAAATAATCCNCACCTNTTGNAAAAANNGATTTA  
 AATTGGGAANAATAATGGGCAANACNTTTTNNGNCTTNGNCCCTTCGGAAANCNGAANTGNACNN  
 AATTTTAAANNNTTNTTANCGNNNTTTTTNTNNGANGGAACCTNTGAANNCTTNTTNTTATGGTTA  
 TTTTTNCAAGNGNTNNTAGTTTTNTNGGNTAAAAAATN

GCCTATCTGGAGCTNCACCGCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGAATT  
 CGGCACGAGGCTTGGTGATAAGGCTCCACCAAAGCCTGTACCCAAGACTATTGACAACCAGCGAGTAT

ATGATGAAACCATAGTAGATCCTAATGATGAAGAGGTTGCTTATGATGAAGCTACAGATGAATTTGCT  
TCTTACTTCAACAGACAGACTTCTCCCAAGATTCTCATCACTACATCAGATAGACCTCATGGGAGAAC  
AGTACGACTCTGTGAACAGCTCTCTACAGTTATACCAAATTCGCATGTTTATTACAGAAGAGGACTGG  
CTCTGAAAAAAATTATTCCACAGTGCATCTCAAGAGATTTACAGACCTGATTGTTATTAATGAAGATC  
5 GTAAAATACCAAATGGATTAATTCTGAGTCACCTGCCCAACGGCCCAACTGCTCACTTTAAAATGAGC  
AGTGTTCGTTTTCGTAAAGAAATTAAGAAGAGGCAAAGACCCAAACAGAACACATACCAGAAATAATT  
TTGAACAATTTTACAACACGACTGGGTCACTTCTATTGGACGTATGTTTGCATCTCTCTTTCCCCATAATC  
CTCAGTTTATTGGAAGGCAGGTTGCCACATTCCACAATCAACGGGATTATATCTTCTTCAGATTTTACA  
10 GATACATATTCAAGAGCGAAAAGAAAGTGGGAATTCAGGAACTTGGACCACGTTTTACCTTAAAATTA  
AGATCTCTTCAGAAANGGAACCTTTGATTCTAAATATGGGAGAATATGAATGGGTCCATAAGCCCCCG  
GGGAAATGGGATCCAGTAGAAGAAAAATTCATTTTATNAANGGACTGGAGAAGGATGGTATTAACT  
GGGCTGGAACCAGGCCTGGAGTTTTTGAACAAGANCTTNTCAAAAATGGNCGGTTACTGGATTTTT  
TTAAACCGGCTTTTCTTTCTGGACCAAAGNGCAAGGGGCCTTGAATTTNCT

15 NNCNATCTGGAGCTCCACCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
CGGCACGAGGATGGCACGTCCCCAGTGTGGGGATGTGCCGTGCTTCCTGAATTAGTGTATTGTAGGAG  
TTGCTGCCCCATTCTGCTCTTCATTGTGAGAGAGGTTACACCCACTTATAATCAGTATTTTCTGGCACT  
AAAACAGCAGGGCTGGTATTTGCTGCTGCTTTCCCAGGGCAGGGTCCCTTCTTTTCGGCACTTTTGAAC  
20 ACTTGCAAGACACAGCCCTGTTATCTAACGGGTGGCAGGCATGTGTGTCTGCACTCGCTCTTTGCCACT  
ATTTTGCCCTGCTCCATGCCANAGAGCCCTGTCCCTGCCAGGCCCTGCCTTCCCAGCCCCAACTTGGGA  
CCAAAGTGCAAGACGGGATCACAGGTTGGGGTGCCAAGTGACCCCTTTCTATAAGTGCTTCCGTGGG  
CCAAGTCGACACCAGCCCCCTANCGNGTGGGATGGNCGGNGCTTAAAGAGGAAGGGGACCAGTGTA  
25 GCAACCTTGCCAGGGACCCACCCCTCCCTTACATCCGGACCCTGTGCAGTGGGCCGTGGCGATTCTC  
CAAAAGGGGCCAAAAGCCTGGGCTTGCTCNGTATTCTCTGCTCCCTTGCTCTTATCNGGTCNCCATGCA  
CACTTCTAAGANTGCCAAATTGCTTTTGAACCTTAAAAACTGGTCANNNTTGGNTTCCCNNTTGGACCN  
ANTTTTAAAAAANGTTCTNAATNGGGAAAAAATTNGNGGGGAAAAACNNTNGGNTAAANGGCNCCG  
GGNTCCCTTTGGCTTNTCGGGGAAAAANACANGNGCCTTTTCCGGAGGGGAACCCNCTTTTCCNCACN  
30 TTTTCNGNANGGTNCCTAAACCCTGTCCACCCCTTNCNAAANCCTTTNGCCCNANANTNNNNCCC  
GGGGTTCTCNNTAACNTNTNTGGGCCCCGNGGGTGTTTTTTTNTCGGANAATNTCTGNNNC

35 GCCCTATNTGGAGCTNCATNNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
TCGGCACGAGGGGCGAAGGTTTCGCGAGGAGGTGGTTACCGTGGGCAATTCTGTTGACCAGGGCCTG  
AGTCAGCCACAGATGACTCCTGCTTCGACCCCTACACGGTCTCCCATTTATGCCATTGGAGAGGAGTG  
GGAGCGATTGTCTGATTCTGGCTTTAAACTCTCGTGCCAGTGCTTAAGCTTTGGCAGTGGTCATTTCAG  
ATGCGATTCTATAATGGTGCCATGACAATGGAGTGAACATAAGATTGGAGAGAAGTGGGATCGTC  
AGGGAGAGAATGGCCAGATGATGANCTGCACGTGTCTTGGAATGGAAAAGGAGAATTCAAGTGTGA  
40 TCCTNATGAGGCCACGTGCTATGACNATGGGAAGACTTACCACGTGGGAGAACAGTGGCAGAAGGAA  
TATCTTGGTGCCATTTGCTCCTGCACATGCTTTGGAGGCCANCGGGGCTGGCGCTGTGACAACTGCCGC  
ANACCTGGGGCTGAACCCGGTTACGAAGGCTCCACTGNCCACTCCTACAACCAGTNTTCCCAGAGAT  
NCNCATCANAGGAACAAAACACTAATGTCANCTGCCAATNTGANTGCTTCATGCCTTTGGGATGTAC  
AGGGCTNACNGAGAAGAATTNCCCAGANGTTATTTTTTTCNCAANCCCANAGNAAACNTNGCGTTGG  
45 NTTTCTTGCCANAGGTNCCANTCCCAAANCTGGGANTGGGGGTNNCACTACCCCCCTTGNTAAAGTG  
GGNGCCCTTTCTTTNAGCCNNTTNNCTTNTGGNNNNAANTTTTTTTCNGTTTTTTTCCNTCAACCCCN  
CCTTTTTTCCAAGCNNTNAAANCCCTGGGAGGNGTTTTTTTCAAGACTTTTTTTTTTCATTANATTGGGGN  
NCCAAGNTAGGTN

50 TTTNAGCCTATNTGGAGCTNCATNNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GAATTCGGCACGAGGCTGNATTGNCCCTANNCANNGCTGCTNCNNGGATGNCATTAAGGINTTCTGCA  
ACATGGAAACCGGTGAGACCTGTGTATACCCNANTCANCCCANCGTGGCCCAAAAAANCTGGTNTNT  
NANCAANANCCCCANGGAAAANAGGCNCGTTTGGTNCGGCAANANCNTNACCGGNGNATTCCANTTC  
AANTATGGNNGGCCAGGGGTCCAATCNTGCCAATGTGGCCATCCAGTTGANTTTCTTGCGCCTGATGTC  
55 CACCGAGGCCTCCCANAAACATCACTTACCANTNGCAAGAACAGTGTGGCTCTANATGGACCAGCANA  
CTGGNAACCTCAANAAGGCNCTNCTTCTNCAGGNCTNNAANGATATCGATATCNGNGCCGAGGGCAA

CAGCCNTTTCATNTACAGTGTCAANTANTANGNGTGCANGANTCACACCGGACNNTGGGGCAANACA  
 GTGATNANATAACAACCCCNCAAGANCTCCCTTNTTGCATCATTATATGATGNGCCCCCTTTGGGA  
 CGTTGGCCCCCAACACCAAAGAAATTCTGCTTCCGACGTTGGCCCTTGCCCTTGCTTTCTGGAAAACTT  
 TCTTNCCACNACAANTGTTGTTTTCTTCCCACNCCAANACCNTTTTTGCCTNNTNANTNTTGGNAAAC  
 5 AAGAACAAACCCCCCTTGCTTGGCCCCCCCCCGNAAACNGCCAAAAGGNTGGGAAAACCTTTTTNTC  
 GTNGGNCNTTTNGAAAAATTTTTTTTTTTNTTTTGCATTCTNTTTNTTCAAAAATTAATTTTTTTTTTTT  
 TTGACCAANTTGGTCCTTGAACAAAAAACCCAGGGGTTCTNNTCCTTNCCTTAACAAAAAATAAATTTT  
 AANCTTNGGGGGGGGGGGCCCCCCCCNCCCN  
  
 10 TTTNAGCCTAINTGGAGCTNCATNNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GAATTCGGCACGAGGCTGNATTGNCCCTANNCANGGCTGCTNCNNGGATGNCATTAAGGTNTTCTGCA  
 ACATGGAAACCGGTGAGACCTGTGTATACCCNANTCANCCANCCTGGCCCAAAAAANCTGGTNTNT  
 NANCAANANCCCCANGGAAAAANAGGCNCGTTTGGTNCGGCAANANCNTNACCGGNGNATTCCANTTC  
 15 AANTATGGNGGCCAGGGGTCCAATCNGTCCAATGTGGCCATCCAGTTGANTTTCTTGCGCCTGATGTC  
 CACCGAGGCCCTCCANAACATCACTTACCANTNGCAAGAACAGTGTGGCTCTANATGGACCAGCANA  
 CTGGNAACCTCAANAAGGCNCTNCTTCTNCAGGNTNNAANGATATCGATATCNGNGCCGAGGGCAA  
 CAGCCNTTTCATNTACAGTGTCAANTANTANGNGTGCANGANTCACACCGGACNNTGGGGCAANACA  
 GTGATNANATAACAACCCCNCAAGANCTCCCTTNTTGCATCATTATATGATGNGCCCCCTTTGGGA  
 20 CGTTGGCCCCCAACACCAAAGAAATTCTGCTTCCGACGTTGGCCCTTGCCCTTGCTTTCTGGAAAACTT  
 TCTTNCCACNACAANTGTTGTTTTCTTCCCACNCCAANACCNTTTTTGCCTNNTNANTNTTGGNAAAC  
 AAGAACAAACCCCCCTTGCTTGGCCCCCCCCCGNAAACNGCCAAAAGGNTGGGAAAACCTTTTTNTC  
 GTNGGNCNTTTNGAAAAATTTTTTTTTTTNTTTTGCATTCTNTTTNTTCAAAAATTAATTTTTTTTTTTT  
 TTGACCAANTTGGTCCTTGAACAAAAAACCCAGGGGTTCTNNTCCTTNCCTTAACAAAAAATAAATTTT  
 25 AANCTTNGGGGGGGGGGGCCCCCCCCNCCCN  
  
 TTGANAANAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 AATTCGGCACGAGGCCNTCCCCCGAGCGCCGCTCTGGCCGCACTGCGCTCGCCCTGAGCTCCGGGC  
 30 TCCTGCTNAGCCAGCGCCGCTGTNCCTCCCTCCAGTNGCCATNATGATCATNTACCGGGACCTCATT  
 GCCATGACNAGATGTTCTCCGACATCTACAANATCCGGGAGGTACGGACGGGCTGTGTCTGGAGGTG  
 GAGGGGAAGATGGTCAGTANGACAGAGGGTAACATCNATGACTCNNTCATTGGNGGAAATGCCTCCG  
 CTGAANGCCCNANGGCGAAGGTACCGAANGCACANNNTCNCTGGTGNCANTATTGTCNTGAACCA  
 TNACTTGCAANGAAACCAGCTTCAAAAAGAGCCTACAAGAAGTNCATNNAAGATTACATGAAGTCA  
 35 ATNAAAGGGAACCTTGAAGAACAGAGACCAGAAAGAGTAAACCTTTTATGACAGGGGCTGCATAAC  
 AAATCAAGCACATCCTTGCTAATTTCAAAAATATCAGTTCTTTATTGGTGAAAACNTGAATCCANATG  
 GCATGGTTGCTCTGNTGGACTACCGGGAGGATGGTGNAACCCCATATATGATTTTCTTTAAGGATGGG  
 TTAGAGATGGNAAAATGGTAACAANAGTTGGCAGTTACTTTGGATCAAATCACCCGTCGGCATAACTG  
 ACTGGGTACTGGTTTTTGGTTCCCCCAGCACCCGGGTTAGGCGGAATGGGACTGNTGNAAANTNGG  
 40 GCTTTTTNTTTTGGTTTTGAACGGTNNAATTTATTGGGNGCCGGNGGCCNTTGTTTTTNAAAAAANC  
 NNGCCNTGGANGGTTNGGCCAAAAAATAAACCCTGNTTGAACCTTATTGGCAAAAAAATAAATAA  
 AAT  
  
 TTGAANAACAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
 GGNTGGGCTCAACCTGGCCTCTGGAGTTTAGTCCCCGCNCTGCTGTGNGCGNAGCTGNTGTCTGCTTNT  
 AGGGNCGCAGNACTGCTGTCGCATCGGGATCTTGATCGTGATGGGTACAAAGGCGAAAGTCGGCAG  
 TACAGAGTTGCTTCTCTTACGTCGATGATCCTTGCTGCTCCCTGGCATTGGGCAGGGGTGCGGTGCAAAAC  
 CTATGAACCGGTAGTCAGAGTNCCTGAGAATAACCTGCCAAGCTGTCTGCTCCTACTCGGGCTTCTC  
 50 CTCGCCACGTGTGGAGTGAAGTTTACCCATGGNGATATCAGAGGTCTCGTTTGCTATAACAACAAAA  
 TCACTGCTTCTATGAGAACCAGTGACCTTCTCGGATACTGGCATNACCTTCCATTCTGTGACCCGGA  
 NAGACACGGNNATGNATACCTTGTATGGNCTCTGATGAGGGCGGCAATACCTACGGGGAGGTACCG  
 TCCAGCTCATCGTGCTCGTGCTCCATCCCAAGCCTACAATCAACGTCCCTTCTNTGTTACCATTTGA  
 ACCCCGAACTGTGCTGACCTGGTTNANAAAAGAAATGGCCTTCCCCCCCCATCTGAATACAAGTGGGT  
 55 TCAAGGGATTGGAGTTAAAAAATGCCTTTTGGGAACCCCAANANNCAAACCGNGGCCTTTTANAGCNA  
 AACTCTTTTCTTACACCTTGAACCAAAAAAANANGGGGAAGTTGAATCTTTGATCCCCGNGTCN

GGCCTTTTGACACTTGGGAANAATTACCCCTGGTCAGGCCACANNAATGGGCCTTTTGCNTTINCCCCC  
 NNGAAATTCNAAAACNCCCGGGGCCCAATGGGANTGCTTTNNGGGANGCTTTAATTGTTTGGGGGGG  
 AATCNNGGGCCANACCTTTNTTTTTGGAAANACNTTATTTTTNCTNNGGGAACCT

5

TTTGANAAAANTNNNNNTGGGGCNNNNNNNCNAGGGGTANNACACTTATAGGANTGCGTGNNGACANC  
 NACGGGCTGCTATGNAATCCTTAACNNNTNNTACCTTTTCTCCTCATTNANNTCTGCCTNCCTTCCTTAN  
 GGGGNCITTTNTNAANNNGACTTTTANNCCNANACCCCCACNNNNACATTTATCANACNCTTANNNTN  
 ACCTTTATNNNCACTCANTAGNTNTCANACATNNNCCTCTCNNCACTCGATNCTNGACNCACCTNAC  
 10 TINTTTCNTTTNNCATTNCGTANAANNNTTTATTTNATNNANACATCANTTTAACCNNGCNCTCNTNCA  
 CGACANNCTNTTNTNCACGTNANACATGNTNTTNNCTCTACANCCNTNNATTTNCNTCAAACCTTNN  
 NNAGCCNNNNANANCNNTGACGTNNNCCACNCTANTATNNCTATCTNTNNCANCCNCNGTCNNATNA  
 GTNTCTTTACNTCACATGANANNCNNTNGANCNTNNCATGTCTACNNANCNCTCTCTNCNTCTCTC  
 NNTCATCNNNNGATATNNTNTNTCNNCTNACNCNCNCNANTCTCANACCCNGNTACTNCTTANACATGA  
 15 CTNACCTCNATCNTNANNTTCGCNCNANCCCTCNAATNNTNTNTCTCTNNNTCTTTNNNACTCTANC  
 NNTNACCGTNCNTNACCTTAANATTCTNTTTTNTNTACNGNCAAGNNNACTNNCNNGTGATNANNNGN  
 NACTCNGGCTANATCCNNNTANATTCTANTCCANTNNNTNCGTCTANCTCACGTANACNCTCCGACT  
 NTCNACNACTATATNTGNTNNTATGANCAACTANTCNCATNNGNACTATGANATAACNCATTCTNCTAG  
 TACCTACNANTCAGTATCNGTAGCCNTCTTANNNTNNTAANNCTACNGATNTGGANNTCACTAGTANT  
 20 CNCGTCCNCCNNGATTNTACAAGATTCCNCTACTCCNCTAACNATNNNACTCCAAATACGTNCNCTAAG  
 NCNACNNTNNCTNTCCAAATTACTNNTAATCNCCTNTNTATCTCGANNCCCTNTNCNANCGANGNAA  
 NNTCCANCCNTACNTATNTAATGANNTNNTNTNGANTNTATTAGTNTCATTNCTTGACCTNTACN  
 TNGAGCNATTATCTNGCACTACGNCNAAAGTTATNNACNNNCTNCCNACTANNAANTNTATGCTATAN  
 ANCTACNCNNTATCTNCNCNCNTTCTNTNCTAAGTANNNTGGANNTACTANTATGCTATNTACNN  
 25 CNNTATNTACACTCACTGGATNATNTNCTACTTCCNTNCANTTTACACNCTANGNTCTCCCGAAAGN  
 NCGCCCCATCTAATTACCANNCTCCTCTCCANCGNNCGTNNGNANCAACANAAACATCTACGCN

20

25

30

GCCTATAGGGAGNNGCATTACAGGGGNCGGCCGNTCTANAACCTAGTGGATCCCCCGGGCTGCAGGAT  
 TCTGCCCGTAATGACTGTGGTGCTGCCAGAGGGATTTTTTTCCCCCTTTCAATGGTTTTACTTAAAGTTAC  
 TGGATAAGCAGTTGAGTTTACATTAAAAACAATGAAATGCTATATCTTGTCTATATTCTGCCTCTTCCAA  
 ATTGGATGTTTTTTTTTTTTGGNAAAAAATTTTCNNTTCCTTNANAANNTTTTNANGGGGGNNNNGGNA  
 GAAANGGGNTAAAAAACCNCNNTTNAANCCCCNNGGGNACCCNNGGGGCGNNNCCNTTN  
 NNGGGGTGCCNNAANCNGNCAATNNANGGNNNTNACNNNACNANACCTTCCNTNNNNNNGG  
 35 AANGGNNGGGNGNACCAAANCNTTNCNNGTGGCAANGGNTNNNTTAAACNNCNAANTNTTCTTAT  
 TAANATANGNANCCCNNGCNTANCCNNGNCCCTAANTAAANNGGGCCCGGGTNGNACCNTTTATN  
 GAAAAGNAANGGNACCCCNCTTNCNANTTTTTTNNANNNNTTTTTGGNNCCCCCNNTNGNGGCCN  
 TTTTTTAAACNNNGGGNGNNGGGAAANCCTTTTGNAANNGAGGAATNNCTTCTTNAAGGATTTTNG  
 ATTTCCNCCCTTGNCNNANANTNTAGCCANTTTTTGGGNAAAAAACTANGGGGCGNNNNGNNG  
 40 TAAANCCAAANGGGAAAAAANGGCNCGNCTCNGGGTTTTNNAACCCCCAAAGGGGNAAACCCGGTTN  
 NTGCGGNGGGTNCCTNCGGAAAAAATTNGGGGTNNNCCCCCNCNCCCTAANNTTTTTTTTANAA  
 NGTTTTNTTTTTTNGGCTTCCAAAANNCNACCCNTGGGGCNANTTATCNTNTAAAAAANGGNTTCCC  
 CCCTNAANAAAAAATANNTTCCCCAAAACNTGCCCCNGNGGNAAAAANNTNGNCNNANCAGGAAATT  
 TTNACC

45

TGAGCCTANTGGAGNNGCATNNCAGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
 ATTCGGCACNAGGNTCCAGCGTGCTGCTCCTCAGCCATGGNGCCCTCCAGGAAGTTCTTCGTTGGGG  
 GGAAGTGAANATGAACGGGAGGAAGAACAATCTGGGGGAACTCATCAACACTCTGAACGCGGCCAA  
 50 GGTGCCAGCCGACACCGAGGTGGTTTGGCACCACCCACCGTCTACATTGACTTCGCCCCGAGAAAGC  
 TAGATCCCAAGATTGCCGTGGCTGCGCANAACTGTTACAAAGTGGCCAATGGGGCCTTTACGGGGGAG  
 ATCAACCTTGGCATGATCAAAGATCTTGGAGCCACGTGGGTANTCCTGGGGCACTCCGAGAGAAGGC  
 ATGTCTTTGNGGAGTCAGATGANCTGATTGGGCAGAAAGTGGCCCATGCCCTTGGCANAGGGACTTTG  
 GAGTNGATTGCCTGCATTGGGGAGAAGTTACATGAGACGGAAGCTTGGCATCACGGANAAGGTCCGT  
 55 TTTCCGAGCAAACCAAGGTCATCGCANATAACNTTGAAGGATTGGNAAGCAAGGGTTGTCTTNGGCCT  
 ATTGAGCCCTGTGTGGGCCATNGGTCTGGCAANGACGNGCNACCCCCGTACCAGGGGCCAGGAANG

TCACNGAAAANNCTCCCGGGGATGGNTTAAAGTCCAAACNTTCTNNTNATGCNNTGGGCTNANAACCG  
CCCCATTCTNTTTTATTGGGGNTTCTNGTNANCGGNNNCAACCCTGCAATAGGAATTTTGCNAAGCCA  
CCCNTGGATGTGGGATNGCCTTTTCTTNTNGGGGCGGGGNTTTTNCNTCAANACCNTNNTTTTNTT  
5 GACNNCINNCAAAATCCCNAAAACANTAANTCCTTGTNTNTTTTTTACTACCCTTTNNTNCTNANCCCNNG  
GCCTTNTNATCNTTNNNTAACNCTTTTATTTTACTTNGCCCCCGGACTTTNCAANATGTTNNTCGGGN  
NGTTTCNCTNACCCNCN

10 NAAAAGCTGGAGCTCCACCGCGNGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGATT  
CTGCCGTAATGAACTGTGGTGCTGCCAGAGGGATTTTTTCCCCCTTTCAATGGTTTTACTTAAGTTACT  
GGATAAGCAGTTGAGTTTACATTAATAACAATGAAATGCTATATCTTGGCTATATTCTGCCTCTTCCAAA  
TTGGATGNTTTTTTTTTTTTNGNAAAAAATTTTNNNTNCTTNNNAATNTTTNNNGGGGNTAGGGA  
NNAANGGGGTNAAAAAANNCNGCCNNCTTTNAANNCCCCNGGGNACCCNGGGGGNCTNCCNNNN  
15 NTGGGGTNNCNAAGNCGNNCCCAACNGAAGGNNCTNANCNNANACANTNCCCTNCCNNNG  
NAAGGNTGGGGNGNANCAAAACCTTTNNNTNGCCANGGNNNGNTTAAANNCAAAANTTTTCTTTAN  
TAAANNNGNANCCCNNGCNTAACNNNGTCCCNAAATAAAAAAGGGCCNGGTNGNNCCCTTTANTG  
AAAAGNAANGGNANCCCNCTTCCANTTTTTTTNACNANTTTTGGGNCCNCCNTTGGGGCCCCNT  
TTTTNACAGGGGGGGTGGAAAACCTTTTGAANNNGGGGTNCCACNTNAANGGATTTTNGGTTTTTC  
20 CCCCTTGCCCCAAAANTTTTCCNNATTNGGGAAAAANTAAGGGGNTNTTTGNGNGCNAACCTANN  
GGGGAAAAAAGGGGGCCCCCNGGNGTTTTTTTACCCCNNAANGGGGAAAAACCCNCCNTTNTTNG  
GGGGGTNCCCNCCNCGNNAAAATTTTNGTTTTNTNCCCCCCCCCCCCNAAANGTTTTTTTTTAAAAA  
NNNTNTTTTTTTGGNCTCCNAAAAACTACCCCNNGGGGNNNTNATTTTTTN

25 TTNAGNNTATCTGGAGCTCCANCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
ANTTCGGCACGAGGCTTCAGCGTGCCTGCTCCTCAGCCATGGCGCCCTCCAGGAAGTTCTTCGTTGGG  
GGGAACTGGAANATGAACGGGAGGAANAACAATCTGGGGGAACATCANCACTNTGAACNCGGCCA  
AGGTGCCAGCCNACCCNAGGNGGTTNGCCNCCCCCACCNCNTACNTTGACTTCGCCCCGCAAAAN  
30 CTAAATCCCCAAATNGCCGNGGNTGCCAAAANTGTTNCAAANNGGCCANNGGGGCCTTTACGGGGA  
AAATCACCTTGGCNTGATCAAAGATCTTGGAGCCACTGTGGGTAGTCTGGGGCACTCCGAGANAAN  
GCATGTNTTTGGGGAGNCANANGANCTGATTGCGCAAAAAGTGCCNATGCNCTGACAGAGGCACTN  
GGAGNGATNGCCTGCATTGGNGAAAATTTATNTGAGNGGGANTCTGGNATCACGAAAGGGTTTTTN  
GACANACCAGGGTATCCATATNACGTGAATTATTGGAACANGGTTNTTTGCCTATGACCCTGTGTGG  
35 NCCATTGGTCTGGNAAGAACGGCACCCCGCAAGGGCCNAAGGAAGTNCACAAAAGCTTCGGGGGAT  
GGCTTAACCACCACCTTTTNTGATGCGGGGGATAAAAACCCCCCATTTATTTATGGGGGTTTTNGGGG  
ACGNGGGCCACCTTGGAAAGGAGCTTGGCCNCCNCCCGGGGGGGGGNTGGTCTTTNTTGGGGG  
GNGGGTTGCCTTCCCTTCAAAGCCTTGNNTTTGGNTNNNNCTTCATNNNNNGGCCAAAAAANTNNNG  
40 CCCTGGTTTTTTTTTAACTANCCCTTCTGGNNNANCCNAGGGGNTTNGNTTNTTTAAANAAACC  
NTNTT

45 TTNAGNNTATCTGGAGCTCCANCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
ANTTCGGCACGAGGCTTCAGCGTGCCTGCTCCTCAGCCATGGCGCCCTCCAGGAAGTTCTTCGTTGGG  
GGGAACTGGAANATGAACGGGAGGAANAACAATCTGGGGGAACATCANCACTNTGAACNCGGCCA  
AGGTGCCAGCCNACCCNAGGNGGTTNGCCNCCCCCACCNCNTACNTTGACTTCGCCCCGCAAAAN  
CTAAATCCCCAAATNGCCGNGGNTGCCAAAANTGTTNCAAANNGGCCANNGGGGCCTTTACGGGGA  
AAATCACCTTGGCNTGATCAAAGATCTTGGAGCCACTGTGGGTAGTCTGGGGCACTCCGAGANAAN  
GCATGTNTTTGGGGAGNCANANGANCTGATTGCGCAAAAAGTGCCNATGCNCTGACAGAGGCACTN  
GGAGNGATNGCCTGCATTGGNGAAAATTTATNTGAGNGGGANTCTGGNATCACGAAAGGGTTTTTN  
50 GACANACCAGGGTATCCATATNACGTGAATTATTGGAACANGGTTNTTTGCCTATGACCCTGTGTGG  
NCCATTGGTCTGGNAAGAACGGCACCCCGCAAGGGCCNAAGGAAGTNCACAAAAGCTTCGGGGGAT  
GGCTTAACCACCACCTTTTNTGATGCGGGGGATAAAAACCCCCCATTTATTTATGGGGGTTTTNGGGG  
ACGNGGGCCACCTTGGAAAGGAGCTTGGCCNCCNCCCGGGGGGGGGNTGGTCTTTNTTGGGGG  
GNGGGTTGCCTTCCCTTCAAAGCCTTGNNTTTGGNTNNNNCTTCATNNNNNGGCCAAAAAANTNNNG  
55 CCCTGGTTTTTTTTTAACTANCCCTTCTGGNNNANCCNAGGGGNTTNGNTTNTTTAAANAAACC  
NTNTT



TTGANACNATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 AATTCNGNCCGAGGCTCCNNNTNCTTTGNTGNNNNAACCGNCCNGGNNCGCNGNNGCTGNAGCN  
 ANTGCTAGAACAGCGGGGAAAGNATNCTTCTCNAGCCAGANGGTGCTGTGNCCCTCCTATGATCT  
 GTGNAGAGGACTANGCGTATATNTCTANATTACACATGTGGNCTAAAGATGCCNTTACTNNNACATCC  
 5 TTTTNTGGGCTNACTCCACCNCCACTGCGATAACCTANTTTCAGCCGNACCACACNGNCTNAAGCGN  
 ACCATGATNGNGACGTNACCNNTGGCACCCNTGNGNTNAAANNCAAAAANGGCNNNGGCATTACTN  
 NNTTGAAGAAGGCCNCCCAANANNGCTNAACCATNACACNNAAACNNTTCNATACCNNNNTNCGNAT  
 CTGTATGANCCAATGANTGCTGGGNCATGNTAGCTNTGNNGNCTGGGCGCAGGNNATGCCAGAGGA  
 NTGTTTTCCNGGCACCCCTACNCTCCTGNCTACTTNTTNTNGCCCATCTNTCCCTTNAANCTNGCCCTC  
 10 TCGGTTGAACCGCATGAAAAANTTNCCAATTTGTTGCAATNCCCTTANTTTTANTTTCAGNNATGTTTTT  
 GATTNCCCTAGCTTTTCAAGAACTGGACCCCTTNTTTTAAAAAAAAGNAACTAAGNTNGNGATAGTTCNNT  
 TTGNCCCCAGGGNNGGGGAAAAAATNTTTCTTNTTTCNNGGGGTAAAAAATNTTCCCCTTGGAACCCC  
 TTTTTTCAAAGGGAAGAAANGATTTTTTAANCNAANCCTTTGTTGGCAANAANAAGGGGCNAAAA  
 AAAAAAANAGGAGTNCCCTNCATTTTCCGGGGTTTTAACATAAAACCCCGTGNTTTGNCTTTTAA  
 15 AAAAAAAAAAANT

GCCTATANGGAGNNGNATNACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGAG  
 AAAGAGCTCGGGGAGTCGGAGCGCTCGGAGTTTGCCACTTATCGGTCATCCTTGGTGTCCGCAGCACT  
 20 CTCTCCCTCTCTCTAGGGCGGCGACCTCCGGCGGCCGGAAGTCAACCATGTCCATCCTGAAGGTCCAC  
 GCCAGAGAGATCTTTGACTCTCGTGGGAATCCCACCGTTGAGGTTGATCTCTTCACCGCGAAAGGTCTC  
 TTCAGAGCTGCTGTGCCAGTGGCGCTTCAACTGGAATCTATGAGGCCCTGGAGCTCCGGGACAATGA  
 TAAGACGCGCTACATGGGGAAAGGTGTCTCAAAGGCTGTTGAGCACATCAATAAACTATTGCGCCTG  
 25 CCCTGGTTAGCAAGAAGCTGAACGTCGTGGAGCAGGAGAAGATCGACAAGCTGATGATAGAGATGGA  
 TGGCACAGAAAAATAAGTCCAAGTTTGGTGCAGACGCCATCCTGGGCGTGTCCCTGGCTGTCTGCAAGG  
 CTGGTGCTGTGGAGAAGGGGGTGCCCTCTACCGCCACATCGCCGACTTGGCTGGCAATGCTGAGGTC  
 ATCCTGCCAGTTCCGGCTTCAATGTCTATCAACCGTGGCTCTCATGCTGGCAACAAGCTGGCCATGCAG  
 GAGTTTATGATCCTTNTGTTGGGGCCGAAACTTCCGGGAGGCCATGCGCATCGGAGCAGGTTTA  
 30 CCACAACCTGAAGAATGTCTATCAAGGAAGAAATATGGGAAGGATGCCCAACCGTGGGANATGAAGG  
 CCGGCTTTGNCCCCAACATCCTGGAACCAAAAAAGCCCTTGAGCTTGCTGAANAANGGCCTTNG  
 GCAANGGNTGGCTACCAGNGAACAAGGTCNTNATTNGGCATGGACCTAACTTGCCCTTGAAATTCTAC  
 AGGGTCGGGCAAGTATGAACCTNGGACTTTAANTCCCCCATGAACCCCT

ANCNNNATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGNT  
 TTTTTCNCANNAGCNCAGACTTTATTTAAGAAGTCCTTGAGATACAAAAGANGACTAGGGCTAGGTC  
 TACAGATNACAGAAGCTTAACCCCTGAGTGTAAGAAGCACTNTACGGGTAAAAGCNGGTGGGAGCAG  
 AGGACACAANGGTGGNTGGCTNGTATTTACTGGCTTTANAAAGCAGAGAGCCCAGATCCCAGCTAG  
 AACATCCCAGTACTGGNTATAGATTCTTTACAAAGGTGTGATACCCTCCTCATGAGCTCTTCTTGAATG  
 40 GATACTTCTTCCGAAAAATNATCATTGACNTCCAACACGAGCACTGGAATGTTTCAGCAGACCTCAGAG  
 TGGAGCGGGGNTGTCTTGTGGACAAGCCAGGCTTNGNGTNGACCATGAAGCTGNTNCAGATAGGCCA  
 GCTCAACTTNTCTCTCTNGCCGACCNCTCCGNTGTANTCTCTTTAANCAACCAATGTTGCCTTCC  
 ACCGAGAGNCTTCGGGGGACCAACGCCCCGCGTGTAACCNCTGGAAGGGGGCACACCCTCNANTA  
 AAGCGCTGAACCATGAACCTTCGAAGGTGCGCACAGCAACCTAANATAGAGGCCGGNCATGGGGCC  
 45 TNCTACCCACGAATTCACGCNGGGGTGACTTTCGTCGAAAACACTTNCNCGNCCCGGAAANTTTG  
 GNNTAAACCCCTTCGGGGGGGGGGGCCCGNNCCCCAATTNNCCCTTTAAGNNGGAGNNNNNNNAA  
 AANN  
 NNN  
 NNN  
 50 NNC

GCCCTATCTGGAGCTNCANCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
 TCGGCACGAGGAATCCCTGGGCAGGGGAACCTAAGACCCACCCCGCAAGCCGCGTGGCAGGGCCAAA  
 55 AACAAACAAAAAGAGTTGGTGGTAAGGGCGTGTGTACAGGTTGTTAGTGGGCTGCCAAGGCAGTACTC  
 GCTGAACCAACAAATCCCCTGCTTTTCTCTCTGTAATCTTTCTTTTAAAACTTTAATCAGAGAGAA



TTTACATACCTACAATTACCAATTTAAATTATACAATCCCGTGTAAGTTCACAAGGNTGGTGTGATC  
 TTANAATACTTTTTTCATCACCCAGACAGAAACCTTGTGCCATTANCAGACACTCTCCACATCCCCC  
 AACCCCTNTAGCTTTTGGCAACTGNTAATCACTTCCTGCCTCTGTGGATCTGCTTTGGAGATTCATAT  
 AAATGGAATCATAGAACATGCGACCTTTTGTGGCTGGCTTCTTCTTCATTACAGCATAGTGTCTCAA  
 5 GATAAACCTCCAAGATAAGCTCAAATCAGCACTTAATCCCTCCTTATGGCCAAGTCGTTTTCCACTGTG  
 TGAGTGTGCTACATCCACTCGTTCCTCATCCATCAGTTAGCATTTGGGTTGTNTCCACTTTCTTGGGTCT  
 TATGAATAGGGGTNATTACCATTACAGCCACAATTTTTTGTATAGGGNGTTATATTTTCAAGNTCCTCT  
 TGGGGTATACATACCCTAGGNAGNGGAGAATTNGCCCGGNTTNTATAAAGNCCAGNGGTTAAACTNT  
 TCCANGGGANGCTGGCCCAAAACAACCTTTTTTCCANNTGGGCAAGTGGCCGGTTTTNNCATTCCCCC  
 10 ACCAANNGGNGGGGGTGGGGGGTTTTAAAGTTTTTTTCCGNACNCCTTTANCCTNGTNCCTTN

AAANCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGTTTTTTT  
 CCCCCAAGCACAGACTTTATTTAAGAAGTCCTTGAAATACAAAANAANACTAGGGCTAGGTCTACAN  
 15 ATANCAAAAANCTNANCCCNTGAGNGTNAAAANCNNTNTAGGGGTAAAANCAGGNGGNANCAAAGNAC  
 AAAANGGGGGGGGGNTGGGANNTTNNNGGNTTNAANGNNAAAAANCCCCAAATCCNANNTAAACC  
 NTCCANCNNGGTTTAAATCTTTTACAANGGGGTCCCNTCCTCANAGACCTCTTCTGTGTGTGGACCT  
 TCTTCCGAAAAATTATTTTACATCCAACACAGAGCTGTGGATGTGTNCACCAGANCCTCAGAGNGGN  
 GNGGNGTTGTNTTGNNCACANNCCNNNTTNGTGNANACNANNANNTTNCNNCATATGGNCNANCNA  
 20 ANTTTTTTTCTNTCTTNTGCGGNCCCCGCTGTGTGTCTTTTTTACACACCCAGTGTCTTTTCGGAGAAA  
 CCTTTGGGCCACCCCCCCCCGCGTGTACACCCGTGGNNGGGGGCACACCTAGAAATNAGCNGCNGCAC  
 CATGAACTTAGGGGGGGCGCGCAACCCCTTAAAAAAGNGGCCGNCAGGGGTCNTTCCCNCCAANAT  
 TNCCGCGANGAATTCTTTGNNNAAGAGCTCTTNNCCCCCNTNATGCTGGNGAAANAACNCTGCGGGG  
 GGGCCCCCCCCCACNNNNNCNNCTTTTANGGGGNNNNNAAAAAANNNNNNNNNNNNNNNNNNNNN  
 25 NNN  
 NNN

AAANCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGTTTTTTT  
 CCCCCAAGCACAGACTTTATTTAAGAAGTCCTTGAAATACAAAANAANACTAGGGCTAGGTCTACAN  
 30 ATANCAAAAANCTNANCCCNTGAGNGTNAAAANCNNTNTAGGGGTAAAANCAGGNGGNANCAAAGNAC  
 AAAANGGGGGGGGGNTGGGANNTTNNNGGNTTNAANGNNAAAAANCCCCAAATCCNANNTAAACC  
 NTCCANCNNGGTTTAAATCTTTTACAANGGGGTCCCNTCCTCANAGACCTCTTCTGTGTGTGGACCT  
 TCTTCCGAAAAATTATTTTACATCCAACACAGAGCTGTGGATGTGTNCACCAGANCCTCAGAGNGGN  
 35 GNGGNGTTGTNTTGNNCACANNCCNNNTTNGTGNANACNANNANNTTNCNNCATATGGNCNANCNA  
 ANTTTTTTTCTNTCTTNTGCGGNCCCCGCTGTGTGTCTTTTTTACACACCCAGTGTCTTTTCGGAGAAA  
 CCTTTGGGCCACCCCCCCCCGCGTGTACACCCGTGGNNGGGGGCACACCTAGAAATNAGCNGCNGCAC  
 CATGAACTTAGGGGGGGCGCGCAACCCCTTAAAAAAGNGGCCGNCAGGGGTCNTTCCCNCCAANAT  
 TNCCGCGANGAATTCTTTGNNNAAGAGCTCTTNNCCCCCNTNATGCTGGNGAAANAACNCTGCGGGG  
 40 GGGCCCCCCCCCACNNNNNCNNCTTTTANGGGGNNNNNAAAAAANNNNNNNNNNNNNNNNNNNNN  
 NNN  
 NNN

TNNNAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GAATTCGGCACGAGGGATAACTACCCCCAGCCAATCCACTCAACACACCCCTCACATCAAACCCGA  
 GTGATACTTCTTATTTGCATACGCAATCTTACGATCAATCCCCAACAACTAGGAGGAGTACTAGCCCT  
 AGCCTTCTCTATCCTAATTCTTGCTCTAATCCCCCTACTACACCTCCAAACAACGAAGCATAATATT  
 50 CCGACCACTCAGCCAATGCCTATTCTGAGCCCTAGTAGCAGACCTACTGACACTCACATGAATTGGAG  
 GACAACCACTGCAACACCCATATATCACCATCGGACAACCTAGCATCTGTCTATACTTTCTCCTCATCC  
 TAGTGCTAATAACCAACGGCCGGCACAATCGAAAACAAATTACTAAAATGAAGACAGGTCTTTGTAGTA  
 CATCTAATACTGGGCTTGTAACCAGAGAAGGAGAACAACCTTCTAAGACTCAAGGAAGA  
 AACTGNAAGTCTCACCATCAACCCCAAGGTTGAAGTTCTATTTTAACTANTTCCCTGGAACCCCTATTT  
 55 AATATAGTTCCATAAATNCAAAGAGGCCCTTATCAGGTATTTAAATTTATCAAAAATNCCAATAACCTC  
 AACACAAAAATTTGCCNCCCTAACCCAAATNTTACAAACCNCCCCTTAGCTTAACATTAACCCGCCCC

NTTCCCCGGACCCCAGGAATGGANTTNCCTACGCCAGGGGGNAATGGGGCCATAACCATTAATGGGAA  
TNAAGGACCTTAATATGNGTTTTAGNNCCNTTAAAAATTNTTGGCCCCCTGGCCTATTAAGCCAGGTNC  
CTTGACCTTTTTTAGCCGGNCCCTAAATACCTTTTAAATTNTTGGGCCGGGGCNTTAGNNCCCTTNTG  
GGCNAAAATNATNTTNTTGGAAAAG

5

ANNANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTC  
GGCACGAGGCTCTTGNTGGGCAGCCTTGGCTTCTGTCATCGTCGTGCCTCCGCCGCTGTCGCCCCCGCA  
10 AGGCTTTGCCGTCGCCGGAGCCACCTCCAGCGACTCGTCGCACCCGATTCTCTCCGCTTCGCTTCCCGC  
CAACCGCAACCATTGACGCCATGTCGGGTATTTCGAGTGACCGAGACCGTGGCCGGGATCGAGGGTTT  
GGTGCTCCTCGATTGAGGTAGTAGGGCAGGGCCCTTATCTGGAAAGAAGTTTGGAAATCCTGGAGA  
GAAACTGGTTAAAAAGAAGTGAATCTTGATGAGCTGCCTAAGTTTGAGAAGAATTTTTATCAAGAAC  
ACCCCGATTTGGCTAGGCGTACAGCACANGAGGTAGAGACATACAGAAGAAGCAAGGAAATTACAGT  
15 TAGAGGTCATAATTGCCCGAAGCCAGTCCTGAATTTTATGAGGCCAACTTCCCTGCAAATGTCATGG  
ACGTGATTGCAAGGCAAACTTCACTGACCCACAGCTATTCAAAGCTCAAGGATGGCCAGTTGCTCTA  
AGTGGGATTGGATATGGGTGGGGTAGCACAACTGGATCTGGGAAAACTTTGCTTATTTGCTGGCTG  
GCATTGGNCCCATTCATCATNAANCCNTTCCTAAAAAAAAGGGGATGGGNCCTATTTGCTTGGNGC  
TGGCNCCTAACTCGGGAAGTGGGCCCAACAAGGTCCAGCNAGGGACTTGNTGAATACTTGGAAAAAC  
20 ATTGTCNCTTTGGAAATCNACNTTGCANTTTTTGGNGGGGGCTTNCCAANGGGACCNCCTAAATCCTGG  
ATTTGGGAAAAAAGGNGGGGGGAAATNTTNTTTTGGAACNNCCTGGGAANAACCTGGTTTAANTT

TNNANCACAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GGAAAAACACACCTGAAATCTTTTTGGAAACAGAAATTCATTTTAAATAGATGGCACAGAGGTAGTCT  
AATGTCATGGGAAATGAGAAAAAATATATACACATTAAAAAGCCTTCTGTCTTTTTGCCTTTTATATT  
25 GTTAATGCATTTTGATTTAATATTCAAATAGCACTGGGTGCAGCAGTGACAAAGCAAAAATCAACTAA  
AAGACTTAGATTCTATTGAGATAGGCAGGCTCATCCTAATCTCAAATACTTACTTATGATAGTAAT  
30 ATTCTATGCTACAACCTATAAAGAAAATACTACTAGGACACCCTCCACTTCTTGAACGTATCAGAGTTT  
AGACAGAAGTAAGAGATAAACATCTATTTCTGCTTTATTGACTACGCCAAAGCCTTTGACTATGTGGA  
TCACAATAAACTGTGGAAAAATCTGAAAGAGATGGCAATACCAGACCACCTGATCTGCCTCTTGAGAA  
ATCTGTATGCAGGTCAGGAAGCAACAGTTAGAACTGGACATGGAACAACAGACTGGTTCCAAATAGA  
AAAAGGAGTCCGTCAGGCTGTATATTGNCACCCTGGTTATTTTAACTTATATGCNGAATACCNTCATT  
35 GAGAAACACTGGACTGGAAGAAACNCCAAGCTGGAATCAAGAATGGCCGGGAGGAAATATCAATTA  
CCCTCAGAATATGCNGGATGACACCCNCCCTTTTGGGCAGAAAGGGGAAGAAGGATCTTAAAAAGGC  
CTNTTTGATGAAAGGTGNAANAAGGGAAGTGGAAAAAAGTTGGGCTTTAAAGCTTCACCNGGNTTG  
NAAAACCGAAAAATCATTGGNCTTNCCCTTCNCTTTNNTNGGGNAAAAAAAANGGGGGNAAAAAGN  
GGGNAAACANGGTTCNNAANTTTT

ANCANNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAA  
TTCGGCACGAGGGTTTTTTTTTTTTTTTTTAAATTAANAGTTNATTANGATTNANAAGNCTNATTTAA  
AAAACNTCAGCCCNNTNAANCCNTGTAAAAANAAGTNTNCAAAANGTNNGNAAAAANAANCNTNCTTN  
45 AANCNTGTTNAAGNAAAAAANTTNTNNNAATTTNNGNATTTNNAGCCNNTTNTTNTNGCNTTATNA  
NNCANGGGCANCCAAANAANCNTNANNTTNNNGGGGGGAAACCCNCCNAAANCCGGTTTNGTNGNA  
AATCCCANCTTNATNTNATNTTNNGCNATCGNCCNTTAAAAGNTTTCNTTTAGGGTAAANANGGNNG  
NANAAAGGGCNTTTTAAAGTCCCAAATNTNTNTNTTTTTTNNNANGNAANGTNTNCCNNTNNNNA  
NAGTTTTTNCNNTNGGNGGGGNTTCCNNGGCAAGAAANCNCCAAANGGNTNTGNCNGAAAAAAT  
50 ANGCGCGCCGNCNCNATGTTNTNTNGGGCGGGCGTCNTTGGCCTTNGGGGNGGACCGNGCCCCCG  
AAANGGATCCAAGTTCNAAAAATGGGAACTTTGNAAAAAATTACCCCGGCNACTAAANTCAATCAAA  
ACCCTCCCAAAAAATTCNCCNNTNTTTTAAAAAANGGNCCCCCNCCNAAAAANNCCCCCCCCGNCCTG  
GANAAANAAACCTNAAANCCCCCCCCCANATGTTTTGGGGAGGGGGGGCCCCCTTGGCTTTTTTTTANA  
AAAAAGNGTTAAATTTTAAAAACCCCCCGAAAAAANAANAANAACCCCCCTTCTNNNGGGG  
55 GGGGGCCNCCCAACCCANNGGGGCTTTNGGGGGGGGCTTTTNNCCNCCNCCNGGGGGGGGAAAA

ANCANNNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAA  
 TTCGGCACGAGGGTTTTTTTTTTTTTTTAAATTAANAGTTNATTANGATTNANAAGNCTNATTTAA  
 AAAACNTCAGCCCNNTNAANCCNTGTAAAAANAAGTNTNCAAAAANGTNNGNAAAAANAANCNTNCTTN  
 5 AANCNTGTTNAAGNAAAAAANTTNTNNNAAATTNNGNATTNNAGCCNNTTNTTNTTNGCNTTATNA  
 NNCANGGGCANCCAAANAANCNTNANNTTNNNGNGGGGGAAACCCNCCNAAANCCGGTTTNGTNGNA  
 AATCCCANCTTNATNTNATNTTNNGCNATCGNCCNTTAAAAAGNTTTCNTTTAGGGTAAANANGGNNG  
 NAAAAAGGGCNTTTTAAAGTCCCAAATNTTNNNTTNTTTTTTTNNNANGNAANGTNTNCCNNTNNNNA  
 NAGTTTTTNNCCTNNGGNGGGGNTTTCNGGCAAAGAAANCNCCAAANGGNTNTGNCNGAAAAAAT  
 10 ANGGCCGCGCCGNCNATGTTNTNTNNGGCGGGCGTCNTTGGCCTTTNGGGGNGGACCGNGCCCCCG  
 AAANGGATCCAAGTTCNAAAAATGGGAACTTTGNAAAAAATTACCCCGGCNACTAAANTCAATCAAA  
 ACCCTCCCAAAAAATTCCCNNTNTTTTAAAAAANGGNNNCCCCCNNAANNNCCCCCGNCCTG  
 GANAANANAACCTNAAANCCCCCCCCCANATGTTTTGGGGAGGGGGGGCCCTTGGCTTTTTTTTANA  
 AAAAAGGNGTTAAATTTTAAAAACCCCCCGGAAAAAANAACCCCCCTTCTNNNGGGG  
 15 GGGGGCCNCCCAACCCANNGGGGCCTTTNGGGGGGGCCTTTTNNCCNCCNCCNGGGGGGGGAAAA  
  
 NCANNANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGTC  
 20 TTTAAACCCTGCGTGGCAATCCCTGACGACCGCCGTGATGCCAGGGAAGACAGGGCGACCTGGAA  
 GTCCAATACTTCCCTAAGATCATCCAATCTCTGGATGATTATCCAAAATGCTTCATTGTGGGAGCAGA  
 CAACGTGGGCTCCAAGCAGATGCAGCAGATCCGCATGTCCCTCCGCGGGAAGGCTGTGGTGTGATGG  
 GCAAGAACACGATGATGCGCAAGGCCATCCGAGGGCATCTGGAAAAACAACCCGGCTCTGGAGAACT  
 GTTGCTCACATCCGGGGGAATGTGGGCTTCGTGTTACCAAGGAGGACCTCACTGAGATCAGGGACA  
 25 TGCTGCTGGCCAACAAGGTGCCAGCTGCCGCCCGTGTGGTGCCATAGCGCCGTGTGAAGTCACTGTG  
 CCAGCACAGAACACTGGTCTGGGGCCCGAGAAGACCTCCTTCTTCCAGGCTTAGGCATCACCACGAA  
 GATCTCCAGGGGCACAATTGAAATCCTGAGTGATGTGCAGCTGATTAAGACAGGAGACAAAGTAGGC  
 GCCAGCGAAGCCACGCTGCTGAACATGCTGAACATCTCCCCCTTCTCCTTCGGGCTGGTCAATCCAGCA  
 GGTGTTTTGACAATGGCAGCATCTACAACCCCTGAAGTGCTTGACATCACAGAAGGAAACTTTTGCAAT  
 30 CCCGCTTNTCTGGANGGCGTCCCGCAATGTTGGCCAGCGTGTGCCTTGCCANATTGGTTACCCAACCCGT  
 NGCATTTGTACCCCCATTCTATCATTNATGGGTACCAAAGCGCGTNTCTNGGCTTTTGTCTGNGGANAAT  
 GATTACACCCTTNCACNTTGTGNAAGGNCAANGGCCTTNTNGCTGGATCCATTTGCCTTTTGGG  
 GTTGGTGGCCCTGGNGNTTGTGNCNCCNGTTGTGTCCTTGTGGCCACCNT  
 35  
 NCANNNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAN  
 TTCGGCACGAGGGCCAGCGAGCGGTCTCCAGGAGCAGTTCACAGCGTCCATGTCCACCTGTTGA  
 AAGGAACTGCCGAGGAGAAGAGTCTCGTGATCCTGAACATGATTTCTGCCTCAGGAGGTCCCGTGAAA  
 40 GCAAGAGATGTCCACAAGTTTACAGAGGACTTGGTTGGCTCTGTGGTGCACGTGCTAAGCTACAGACG  
 GCAGCTGCGAGCTGGAGTCANAAAGCCACCCCCAGGCTCCCCATCCAGGGTGCAGGTGCTGGCTGCC  
 AGCTTGTGCTCCGAAGATGAAGGCTTAAGGTGGGCGGGAAGCTTCTGGGACCTCAGTGGTTGGACC  
 GCGACTTGTGACCAGGCCCGTGTCTCGAGGACTGGGGTGTTCGGGGGCTCACCACGTGCCACGTTTCTG  
 AGCCTGGGTCAATCCACCAGGGCTTCTCCTCTTGCCTCGTCCCTCAAGCTGCCACCCTGGTCCCCCG  
 45 AGCGCCAGGTGGACCCGACGCGGGGAGTTTCGCCAGCGTCTGGACGTNCTTGTCCGTCTATCTACGTAAC  
 TCGCACCTTGCCCAAGAACCGGGGGCTNAACTTGCGCCCTACTTCTTCGCCACCGAACTTCCACGGGA  
 ACAAGCTTTTGGCAACTTNTGCGGGCGCCATTTCGCACACGCGGGGGCCCTTGCCTGGTGTGNTCGAA  
 GGACANGNNAACCGGCCAGTGTGTTTCGGAAGGTTTCNCCTTCTTGTCTTCTTNGGAAAGTCAANCCCTT  
 AANTTTTTTAAANGGGGAACNANNAGGGGCTTTTCTTGTGTTTTCGGTTTTCCCCCGNNATNGGCGTTTTT  
 50 ACCTTNGGNGGGGNTTTNAAAAAACAATTANTTTTNCCTTANAAAAANGGGGNANNNNAANTTTCCC  
 AAANGGTTTTGGGGATTNNGAAGAAAACCCNCGTTTCTTTTGGNTTNGGGGNACNNNNNTNATTN  
 GGGAA  
 55 NAAAACTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCTTA  
 AACGAATACATTAACGGTGCTAAACACAGACATTTTAAACCAAGTCACGACATTCTTAGCTGTAATC

AGCTCTCACGGCCTCTTGCTCACCCATGAATGGTCCCGTTTTCTCTTGCCGCGTGACCTCCACCCATT  
 GTCTTGGTGGCACATGGGTGGAACACTTGATCTGCTCGAGTCTGCCTTCAACACACATTGCATCTTCAG  
 ATTTTCTACTTTTCTGNTCAAACTAATATTCACCAAGTCAGACTTTGNGTTAATTTTATATCAGGGTAT  
 TGGCTGCCAGGGGGTCATCCCTAAGTGGCCTGAAGATGGACAAAGGGAAGTAACAGGCACGTGATGT  
 5 TGGCAAGGATGCTTCTAGGGCTANAGGATCAGTGGTGGGANANAGCTGCANAATCCACCANCCAGAA  
 CTGCAGATAACGAATCTTATGGNCAGGGGCTGTGACTGANAGAAGGAACTGAGGNTGTGTTCTGAA  
 AGTACATAAACTCTCACATATACCCAGTTCTTNACCATCTCCCCTCCTNACTTTGCAGTGCCATTTCTTT  
 TTGCATTAGGCAATTTGCTCAGACTTTCCAGAGCCATGGCCCCATCCGTTCTCTGGAATCCCCCACACC  
 CTCTGAGANGTGGATCACCACGTCTGCAGGGNCTGNTCCCCTCCAACTACCTTTTANGAAGATGCA  
 10 CGGACAAGGGAGGCTGTTTTCANACCCNNCAAAGACCNNAAATTCNAGAAGCGAGGAGCCNCAACG  
 TGGGTAAAAACANAAAAAANGGGCAGGGGGGNGAAAAATNGGGTTTTCTTTTTGGGGGNTTTCNGGT  
 GTTTCTTTTTTTTNCNCNCTTGGGATNGGCTGGTNCCCCAAAAAATNTTTTTAAGTCNC  
  
 15 NGCCTACTGGAGCTNCACCGCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGNGCN  
 ANACAAGTTGGTAAAGATAGAGTTTTTAATACCCCACTGTGTGAACAAGGAATCGTNGGATTNGGAAT  
 NGGAATCGCAGTCNCCGGGGCTNCNGCCNTANCAAAAAATNCAGTTNGCAAATNATATTTNCCNTGNTT  
 TNGATCAAATGGTAAANGAACCGCCANGNNTCGNTNCCGGNCNGGGNACCTTTTTAATNGGGNAAN  
 CCTAACCATCCGGCCCCCTNGGGGCTGNGTNGGCCACGGGGCTCTCTATCATTCCAGAGTCCTGANN  
 20 CTTTCTTTGCCCACTGCCCAGGAATCAGGGNGGGTGCNCCCAAANGCCNTTTCNNGGCCAGGGNACTT  
 NTTTTATNNNGCATAGANGATAAAANCTNTTGTATATTTNNGANCCTAATANNCTTNACNGGGCANC  
 AGNGGNGCNGTNCNTGTAGANCCATACAANATCCCTNTTTCNCAATCTGAAGTCATCCAAGAGGGG  
 AGTGATGNTCTCTAGGCGCCNGGGGCACTNANGTTCATGTGNTCCGAGAGGCGGCTGNCATGGNTCAA  
 NAAAAATCGTGGGGTGTCTTGGGANGTCNTTGTGNTCTGACGACTNTACCACCGNGGGANGAGCAACAG  
 25 GCANNANGGNTGTNANNANAACNNGGACGACTGGTAATAANTNAGGAGCTTNCTTTGGACGGCGGTT  
 TTTCTNTAAAAACCNCCCACCGNTGAAGNAAGAATTGTTCTNTCAACCCTGGNAACCTNCTTAAAGGG  
 GGGGNGGGGGGNANAAAAACCNCCNNTTCCNTTTTTNTTNGACCGNTTTCNTCCCAAACNGNNGG  
 GAATNNNTTTCNCCNCCCTNAAAAAAAANGANNNNNTTNC  
  
 30 NGCCTACTGGAGCTNCACCGCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGNGCN  
 ANACAAGTTGGTAAAGATAGAGTTTTTAATACCCCACTGTGTGAACAAGGAATCGTNGGATTNGGAAT  
 NGGAATCGCAGTCNCCGGGGCTNCNGCCNTANCAAAAAATNCAGTTNGCAAATNATATTTNCCNTGNTT  
 TNGATCAAATGGTAAANGAACCGCCANGNNTCGNTNCCGGNCNGGGNACCTTTTTAATNGGGNAAN  
 35 CCTAACCATCCGGCCCCCTNGGGGCTGNGTNGGCCACGGGGCTCTCTATCATTCCAGAGTCCTGANN  
 CTTTCTTTGCCCACTGCCCAGGAATCAGGGNGGGTGCNCCCAAANGCCNTTTCNNGGCCAGGGNACTT  
 NTTTTATNNNGCATAGANGATAAAANCTNTTGTATATTTNNGANCCTAATANNCTTNACNGGGCANC  
 AGNGGNGCNGTNCNTGTAGANCCATACAANATCCCTNTTTCNCAATCTGAAGTCATCCAAGAGGGG  
 AGTGATGNTCTCTAGGCGCCNGGGGCACTNANGTTCATGTGNTCCGAGAGGCGGCTGNCATGGNTCAA  
 40 NAAAAATCGTGGGGTGTCTTGGGANGTCNTTGTGNTCTGACGACTNTACCACCGNGGGANGAGCAACAG  
 GCANNANGGNTGTNANNANAACNNGGACGACTGGTAATAANTNAGGAGCTTNCTTTGGACGGCGGTT  
 TTTCTNTAAAAACCNCCCACCGNTGAAGNAAGAATTGTTCTNTCAACCCTGGNAACCTNCTTAAAGGG  
 GGGGNGGGGGGNANAAAAACCNCCNNTTCCNTTTTTNTTNGACCGNTTTCNTCCCAAACNGNNGG  
 GAATNNNTTTCNCCNCCCTNAAAAAAAANGANNNNNTTNC  
  
 45 TTGGANACCNTCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GAATTCGGCACGAGGACTTTNNGTCCCAACNNATTCNCTNNATNCTNNGGNTTCTATNCTATGCAA  
 GAGATACCTTCNTANTTGNATACTCAATCNTACNATNAATNNCTANCCCACTATGANNANTNNTAANN  
 50 CTANCNTTCTNTATTTNTTANTATNGCTNTNAAGCCNNTNAAAATACNCACCTTAGGGNTTCATACGGA  
 AACCATNANTNNAACCTTCCACTCANCNNGGGTGCCTAATNNATGATNCCACTAAGNTTGCAACATTN  
 CACCCGACGCTCACATTNAANNTNNNNNGACNNACCTNNTACGTNANACCCCNNTAATCGNCGGNTT  
 NGNCANAAGNAAAAANANNNGGTNTNNGTNTGTAANNGCNCTAATACNNANNTNCTTCTNNNTNNN  
 GTTTTCCCNANCCTGNNTTNTCATNAANACNNAATTAGGGNGGCCANCGGCCCTTAATGGGTNCCTNT  
 55 TAATTANNNTNTATNCGTNNNNCCNTATGAAAAGCGAGNTTAAACANTNNCGNTNCCANAAAC  
 CTTCTGNANNNTAANTGCTTAATTNCNNTTCCANCCCTNNCNNTTNTTGAAANATNNNTNTCCCNAT

ATNANNTACCCTNGCCCACTTTTTANTTTTTGTTTTNNANTNCNACTCGNNNGNNGCCTTNCNTAANAT  
NTNACNTTTTTTCGCGNTNNGNCCTNTNTCCNANACNTTNACTTNNNGNNNCTTNGNNANCNCCTNTNT  
CNTCCCACCNTCTTCNTNTTTTTCCNTTCCCGNNNGGNCATANCNCNNAACCANNGNNTTNAANTCC  
CNCGNCCCCANGGNGCTTTTATNCNTNANAATTNANNGNNNCTCGGCCCCCAANTAANTCNTTNTCNA  
CCTTNNNTTTTTATCCCCCGGNTATACNNNNANNNCNTNTACNTCTTNNCNTTNGCATTTACCNGT  
TGTCATTTCTGCTGGGGCAANNCTNCCTTTANTTCNNNAANNNTNCCTTTNTTNCATNCC

NAAAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGATTGA  
NTGCNGNNTGAATNNAGCGGNNAACANGCTCGGGGCCANNTNGCGANTAAGAAGTGNNNNCGNAT  
ACANGAGNGNNTTTTTTNAAACTANNNCACNGNTTGTGNTNACTGGCTGNNNACAANATATCCN  
ACCTTNAACNNCTGTCCGANCTANCTGNANTTNAANGGATGGNNANNGGCAANNNCCCCTNGNGNA  
NNGACTNTCNTCTAGGNGCANGGGTACAGGGGTNCTNTTCNNACNCCTCNGCCNCNTAANCTGNNNN  
CANGCNANTGACCNCAGCNGGACACAGGGTNCATNTCCTGGGAAGNTCNNAACNGGTTACATCNCAC  
TTGATGNTGACNTCNAAGACTTTTCCCTAGGAAGAACCAATGGGGCACNCTTTTACNTGGAGNTGCAA  
TCCNGGGATCCGCANNCANNGTTTGACAAGGTAATTAATGCTCTGANTGAACGGGNCNTNCTTCATGAT  
AACCTCCAGTTTNGGACGGCTTGCCCGACCTGTTATGNGTNTGGGCCCNANGNGCTTGCATGGNCAA  
CCTTNAGGNGGCAAAAACAATCAAGTTCACCNCTCATGGTNTAACCAAAAACAATGGCTTCCTTTAAG  
TGGNGGTAAAACCCCTNNNTNNNNNNNTTTTTNCAANANAAAANGGGNNAAGGGTCCCCCNTNNGG  
GGGGGGGGNAAAAANGGNCNAAANNTTNAACNNANCCCGGGNCTGGTTTCCTTNNAANNTTTN  
CTTTTTTNGGGCCANCNAACNNGNAANGGGATTNCNNNNNAANNTTNNCCNCNNNTTGGNCCNNN  
GNNNNGGNAAANTNNNTNANNNNGGGNNNNNTNCNNNTNCNTTAANNNCCNNNNGGNNNGG

NAAAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGATTGA  
NTGCNGNNTGAATNNAGCGGNNAACANGCTCGGGGCCANNTNGCGANTAAGAAGTGNNNNCGNAT  
ACANGAGNGNNTTTTTTNAAACTANNNCACNGNTTGTGNTNACTGGCTGNNNACAANATATCCN  
ACCTTNAACNNCTGTCCGANCTANCTGNANTTNAANGGATGGNNANNGGCAANNNCCCCTNGNGNA  
NNGACTNTCNTCTAGGNGCANGGGTACAGGGGTNCTNTTCNNACNCCTCNGCCNCNTAANCTGNNNN  
CANGCNANTGACCNCAGCNGGACACAGGGTNCATNTCCTGGGAAGNTCNNAACNGGTTACATCNCAC  
TTGATGNTGACNTCNAAGACTTTTCCCTAGGAAGAACCAATGGGGCACNCTTTTACNTGGAGNTGCAA  
TCCNGGGATCCGCANNCANNGTTTGACAAGGTAATTAATGCTCTGANTGAACGGGNCNTNCTTCATGAT  
AACCTCCAGTTTNGGACGGCTTGCCCGACCTGTTATGNGTNTGGGCCCNANGNGCTTGCATGGNCAA  
CCTTNAGGNGGCAAAAACAATCAAGTTCACCNCTCATGGTNTAACCAAAAACAATGGCTTCCTTTAAG  
TGGNGGTAAAACCCCTNNNTNNNNNNNTTTTTNCAANANAAAANGGGNNAAGGGTCCCCCNTNNGG  
GGGGGGGGNAAAAANGGNCNAAANNTTNAACNNANCCCGGGNCTGGTTTCCTTNNAANNTTTN  
CTTTTTTNGGGCCANCNAACNNGNAANGGGATTNCNNNNNAANNTTNNCCNCNNNTTGGNCCNNN  
GNNNNGGNAAANTNNNTNANNNNGGGNNNNNTNCNNNTNCNTTAANNNCCNNNNGGNNNGG

TTGAACAAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
AATTNCGCACGAGGAGGACTACTAATATACCGANCCACCTANTATCCTCCCTTCTATGCTTAGAAGG  
AATAATGCTATCCCTATTCGNTATAGCAGCCCTAACAAATNCTNAACTCACATTNTACATTAGCTANCAT  
AATACCTATTATCCTACTAGTCTNCGCAGCCTGTGAAGCAGCCCTAGGTCTATCTCTACTAGTAATAGT  
ATCAAATACATATGGACTGATTATGTACAANAACCTNAACTTACTNCAATGCTAAAATACATTATTNN  
AACAATTATACTTATACCCNTAACCTGGNTATCAAAAAATAATATAATTTGGGTAACTCCACAGCAC  
ACAGCCTTCTAATTAGCTTTACAAGCCTNCTCCTCATAAACCAGTTTGGCGACAACAGCCTTAATTTTT  
CACTACTATTTTTCTCCGANTCCCTATCCACTCCANTACTAATTTTAAACCATATGGCTCCTCCCTCTAAT  
ACTAATAGGCTAGCCAACATCATCTATCANAAGAAAACCTAACCCGAAAAAAACNATTTATTACTATG  
CTGATCTCACTACAATAATTGCTAATTATAACCTTTACCGGGCATNGGAACTAATCTTATTTTATATCCT  
ATGNGAAGCAACACTAGTCCCAACACTCANTATTATTACCCGANGAGGAAACCAAACAGACGCCTA  
AACGCCGACTCTATTTCTATTCTATACCTAAGCNGGCTCCCTAACCTATTAAGCGCNCTAAATTAT  
ATTNCNAAACCCGGGGGGANCCCTAAAATTTCTAAAAATTAACGGGNCNGGGGGNCAANCCGGGTC  
AAAAACCTTGGAANA

NNNNATCTGGAGCTCCACCGCNGTGGCGGCCGCTCTAGAAGTGGATCCCCCGGGCTGCAGGAATT  
CGGCACGAGGCATCCTGGGCGGGGTCATTAGCGCCATTAGTGAGGCGGCTGCGCAGTACAACCCAGA  
GCCCCGTGCCCCCTCGCACACATTAACCAACATTGAGGCCAATGAGAGTGAGGAGGTCCGGCAGTTCC  
GGAGGCTTTTTGCCCAGCTGGCTGGAGATGACATGGAGGTCAGCGCCACAGAACTCATGAACATTCTC  
5 AACAAAGTGGTGACCCGACATCCTGATCTGAAGACTGATGGCTTTGGCATTGACACATGTGCGCAGCAT  
GGTGGCTGTAATGGATAGTGACACGACTGGCAAACCTGGGCTTCAAGAAATTCAAGTACTTGTGGAACA  
ACATCAAAAAGTGGCAGGCCGTATACAAACAGTTTGATGTTGACCGTTCAGGGACCATTGGCAGCAGT  
GAACTCCCAGGGGCCCTTTGAGGCAGCAGGATTCCGCCTGAATGAACATCTCTACAACATGATCATCCG  
ACGCTACTCAGATGAGGGAGGGAACATGGATTTTGAACAATTTTCATCAGCTGCCTGGTCAGACTGGATG  
10 CCATGTTCCGTGCCTTCAAATCTCTCGACAAAGATGGCACTGGACAAATCCAGGTGAACATCCAGGAG  
TGGCTGCAGCTGACCATGTACTNCTGAACGGGAGCCCCAAGGCCTGCCCCCTCATCACCTTGCTGTAN  
GAGTCACCTTGGAATTTTCGGTCTTCCCCAAGGGCTGATTCTTGTCTGGAGTCACATTTTTCGTGGGTCC  
TGGCTGACCCCTTTTTTGTCTTTTANCCCTTTGGCANCCCTGGATTTCTCANTTCAACAAGCCANGGCC  
CAACATGGCTTTAAACACGCCCTTGCCCCTTNAAGTTAACCCCCCCCCCAANANAACCCATTTTGGNTT  
15 ACTTCCATTAACCCCTTTTTTTTGCNCTGGGCCAAACCCCAACATTTGGGTG

TCNTCAGNGGGNCNCGGGCGCAGCGCGCANCGTGCCCCNNACNNTCTNCATGNNATAACNCAACNNTG  
GNAAGTGTCTCCGNNNCNGTTNATGNNCNCNCTTAANCANNCNNNANGGCNACCNTNCGCCTCNGC  
20 NCTNCCNNTTCNACNNNCNGCAATAATTTTNTNATNTNNTCCACCCNCNTNCCNTCAAANNCCNGN  
NNGGGGNNCCTTNTTGNCTANNCNCTTACCNAANCCNCTCNTNNNTANCTNCGANNTATTANNC  
NTANAANANNGCGANNCCGNCNGGNGGGTGTNCNTAGTANNANNNATTGGTNNCAGNNNCCTN  
GNCNNGNCTNTNTNNNTNTANTGTGTNANNNNCGNCCGNNGNATANTNTTNGNGNGNNGN  
25 NGGNAGNGNGACNGGNTNTNTTGTNTNTNTGNNCANGGNGCNGNATNAGNGCANNANNTCN  
NNNNNNANGTNNANNTTNTATNTNTGTNGAANANACTANNGCNCCTCCAGGGNTCGNNNTTTCNT  
TNNCNCNNGNCCNNGGTAAGNNCTNAGNNGNANNNGCNNNGNCCNCCNATTNN  
TGGTNTATTNNAGNGNCCNNGAGNNCNNNTNNGAGNNATGATCNCNCAANNNTNGTCCAG  
GCGNANAANANGNNNTANATCGNGANGNNCNCCTGNNGNNGGANNNNATNGACNGCNNNNCTNGG  
30 NANNGNNCCNCCNCGACNNCANGTANCNNNNCNANNTCNNGNGCTGNNGGGCGNCNGTCTNNA  
NNGNTANTGNGGCGNCCGNCNCANNCACCTGTAGTCATNTCATCGNANNTNCCTCCACGNACGAG  
CGNCCCCCTGNACGGTCNNNTNCTCCTCCGTNCCACCACNCAACCNNNCCAAACNNNCNATCNTAGTA  
NNGTCTCCTCCNTCCNCNANCCCTCAANGATCTTNCNNTNTTTANCCCAACNGGATNCTNTGCCNGNCCGT  
CGCCTNGCGNNTNCANNNGNGCCTAANNCCNCCNCTTCNGNCGGGCGGCTCNGACGGGATTTGNNTN  
35 NTCATTCACCATCNCNCTNCAAGTNNCGNNGCNGTNTATANAANANCAGCNCANNANTAGGGT  
ANNAGTTNGGANGNGCANTNNNGGTGTATATGCNANGGCNCCGGTCANCNCGNTAANANGNNGCGA  
NTAGTCCAGANAGGNAGCAGATANANCGNCGCANNNGCGTTGCGNNNTATANNNNNTGCNANCN  
ANNNCNNNNNCNCCGTGCAGCACNTGCATNCCNCGNANANANTGTNANTNTGCGAAAGCGANANAN  
TANCTAACGAGANACTTNCNANATANAGTGNTATANAGNNNNNTGATGNNACTNTGTCTTGNN  
40 NNGNGAGCCG

GGGGGGGGGAGCAGANTACNTANNATAATTTTNTNTNNTNATNNNNNNNTCAACNNTNNACTCNA  
NNCTNANTAGANCCGACNAAANACNNTCNNTAGNNGGGGGGAATANAGGACGANATATGATTNNTTT  
45 TGGAGANACNNNTGGANNTNATNNCNGTGGCNGGCCGCTCTAGNAACTAGTGGANCCCTTCGGNCN  
TGNNGGNGNANAGAAGANNCATNGTTTATANANTAGCTNCTTANNNCANNANTGCNAGCGGGGGT  
NNTNATTTNTTTTNTTNCNTATNTTANTNNCANTNNCANGTNTTCGTTNCTNGTGANTAGCAANNAC  
TATNTANAACNTNTTANTAANTNATATCTTNCNCTTGNTATTGANGTAANANTGNTNANTGANAGCA  
TNNGAAGTTNNTNCGCANCTTGGNATTAGGANGACCNTTNTCNAATTTNGNNGNAANCCNCCACGN  
ATTCTGNTTNTTTTNGGGGNNGTNTTNTCGNNTCANNTCTGCTNTNTATNCATTNCNCAAGANTN  
50 CNNGAANACTTTTATTTGNNCACTGGNCNAAGNATNATAGGNGGGTGGTAANNATANNANNTCA  
TNTTTTGATNNGCCAAANNCGANCTTTANTNNATTATTCACNTCATNAANCATNGAATANAANAAN  
GGCNTGATNANANTNGTTNTTTGAANCCCNATAAANACTGACTTTGATANNANTCNTTNNANNTATNG  
NCGAGAATNCAAGTGNNNNNNTTNGTTATTAGNNAGAANACANNNGACCNCNCCTTGNNNCCC  
AANGCNTGANANNTAATNTNTCATATNTATGGGNGANNATAGAATGGCTCANCACNAATATACNTAT  
55 ACNNTCNAANGACGCATNATNTGGGCTTACANNNTNTAAGCNCNCAANNCGTGNACTATTATTG  
TANTTTGGGAANNNACTACANANATCCACTTTNNACNTCTNATATTTTNTTAAATAGNGCTNTCCGN







GTAAATGGAATCAAAATGGTGAACAAAAAGATATTGTGACAAATAACGGTGTTCATCCATTTGATTGA  
TCAGGTCTGGTTCCTGATTCTGCCAAACAAGTTATTGAGCTGGCTGGAAATCAGCAAACCACTTTTAC  
AGACCTTGTGGCCAGTTAGGCTTGGCATCTGCTCTGAGGCCAGATGGAGAATACACTTTGCTGGCAC  
CTGTGAATAACGCATTTTCTGATGATACACTGAGCATGGATCAGCGCCTTCTTAAATTAATTCTCCAGA  
5 ATCATATATTGAAAGTAAAAATTGGCCTTAATGAACCTTTACAATGGACAAAACCTTGANACCATTGGA  
AGGCAACAGCTCAGAGTCTTCGNGTNCGCCACAGNTGCTGGCATTGAAAATTCATGCNTGGGNGAN  
AGGAACCAGCAAGGAAAAATNGNGCCATCCATTATTCCAAGAAATCNTCAANCCACCANAAAAATCC  
CNTTTTGNAAAACTGGAACCAANANAAACCNCTTCAACCANTTTTNCCTAAGTCTACTTGNAACCTGG  
10 CAAACTTGNAANAACCTCCTAACCCAGCCCTGGGAAATTGGGACCTTTTTTTTGGNNCCAANCCAAT  
GGATGCCCTTTTANGGGGAATGGGCCTAATGGAAANAAAAANGGGAAATTNTTGGATTTCGGGNNANA  
AAAATNGCTTTTTTNAAAAAANATTTTTTCNTTTNTTAACCCGGAACCCNNGGGAGTTTTTATTTGGGAAA  
AAGGGTTTTNNNT

15 TNNNNNAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
GGCTTTGTAACCTCCAACAATGAATACTTCAACTTGTATCAAAACAAATAATGAGTATCCACAATTCT  
AAAGGACAAACATGAACATTAATATTAATATCTCTGATCCTATTTATTGGATCAACAAACCTACTAGG  
CCTATTACCCCATTCATTACACCAACAACACAACCTATCAATAAACCTAGGCATAGCCATCCCCCTGTG  
AGCAGGAGCCGTAATTACAGGATTCCGCAATAAACTAANGCATCACTTGCCCATTTCTTACCACAAG  
20 GAACACCCACTCCACTAATCCCAATACTAGTAATTATTGAAACTATCAGCCTTTTTATTCAACCTATAG  
CCCTCGCCGTGCGGTNAACAGNTAACATNACTGCAGGACACCTATTAATTCACCTAANNGGAGGAGCT  
ACACTTGCNCTAATANGCNTTAGCNCTACAACAGCTCTAATTACATTACCATTTCTAATCCTACTAACA  
ATTCTAGAGTTTGCAGGNGCTATAATCCAGGCCTATGTATTCACTCTCCTAGTCAGCCTATATCTGCAT  
GACANCGCATAATGACACCCCAAACTCATGCTTATCATATAGGAAAACCCAAGCCCTTTGACCTNTT  
25 AAANGGGGCTTTGTCTGNCCTCTTAATAACATCCGGGCCTAAACCATGGGGAATTCACTTTTAACTCA  
AAGGACCTTGGCTAATAAATGGGNCTAACCCCAAAATTTCTTACCATNTTTCCTATGGGTGACGGAA  
ATGTTTTCCGANAAAAGCNCCTTTCAANGGGGNCCATAANCCCCACNTGTNCNAAAAAGGGGCNCC  
CGTTTTGGGAAAAAATTNTTTTTTTTATTCCCCCGAAAAAATNTTTTTTTTANCGGGANTTTTTTNGGG  
CTTNN

30 TTNANAAAACCTGGACTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCTT  
TGCTGANGGNNACATTGAGCTCCCAGCGACTTCAGGGGCATCTTTAGGAGTCAGCACTATGGNAGAAG  
ACATCCAGGCCAAAATCAAGAACTACCAGACTGCTCCTTTTGACAGCCGCTTCCCCAACCAGAACAG  
35 ACCAGGAACCTGCTGGCAGAACTACCTGGACTTCACCGCTGTGAGAAGGCAATGACCGNTAAAGGAG  
GTGATGTCTCCGTGTGTGAATGGTACCGGCGTGTGTACAAGTCCCTCTGCCCCATATCCTGGGTGTCAA  
CTTGGGACGATCGCCGGGCAGAAAGGCACGTTTCCTGGGAAGATCTGAACTGGCTCCATCCACCTCTT  
CTGTCTCCGTCTTCTCCCCAGGGTGGTGAAGGGGGACCGGGGTACATGGTGATCCCCACCCTGGGA  
TCCTGACTCATGGTATAACTAATAAANTGCTCGTTGNAAACGTGAAAAAANAANAANAATCT  
40 ACNNGGGGGGGCCAGNCACCATANTCCNTAAANGGAATCNGGAATNCCCNNTNGNNCTTNNNTNTN  
AGTNNNGGNTGNTNCTNACCCACCCCTTTTTTTTTNTTTTTNNNNNGAAATCTCANNNCNCTTNTNTT  
TNTTTNNAANNANCNNNNNGGGGGGCNNTTTTTNTTAAAAAANNNGGNNTTNCNNANGNNNANNNG  
NNTTTTTNAAANTNNNNAAACCCNTTNTTTNAAANTTGGGGGNTNANCNNNNNGGGNCCNNNNNNCNA  
ATTNNNNNCNCCNNAANNNCNGGNANNNNNNNNCCNNNAANNNNCNCCNNGGGGGGGGGGCC  
45 CNNNNNNCCCNANNTNNNNNNNAAAAANGGGGNCCNNNTTAAAAANNAANNNNNNNNTTTTTT  
NNNNNNNTTNNNNNAAA

50 CCCNACTGGAGCTCCCCGCGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGATATA  
TCCCCTCGTCAAAATTCTGTAAACTAAAAGTCAATGTCGATTGAAGGAAAGGGAGTCAGAATTCATTCA  
GGGAAAAATTTAAGTGATTACTTCAAACTCTTACTATTATTAACCTTTTTTATAAATAAATGCTTCTATT  
TGATTAACATATATTCAGGGTAGAATTATAAATGAATAATTCTGGCACAAAATAGGACTTCATAAAT  
ATTAGAAAAATAAATGAAATCATTGAGATGAAGATAAAATATAAGTCTTTATGATTACAATCTCTGTA  
AACATAAGTGAATGTGAGGATTCTGTCTTAAATTCATCTCAACTGTGTAGAAAGCCACTTCTCTACCA  
55 TGTTCCTATCTCTGTCCCTAAAGAATATCTGTGATTTTTTATCCAAGACTACTGTGCTCTCTCATTTGGT  
TGAATGCCAAGCATCCACAGGCTGACTGTTGCTTCTGGACATCACTGATGCTACTTAGCAGCAGCAGC

AGCAGAACACACCATAGCAGGTTCTGTTTCTTTTTTTTTTTTCTTTCNAATTTTATNCCANCATTATGG  
AAATTCNTTCCCTCTACCCNCTAAATTGGGGACAAAAACCTCNGTTTTTCCCATATNGCCNGANCTTTT  
CATTTTTATTCCCTTTTTGGANGCATGNGATTAATTNTATNCCTATCTTTAAAAATCCNCCTTACATGCNG  
GCCTTTGGGGNNCCCCCTTTNGAAGGGAAGGGAATANNNGGGAATTAATTTTGGTNNTAAAAAGAAAAGT  
5 NNATAAAANAATAAAGANGGNCAAAATACCCCCCCTGGTTTTTTGGANGGGGNGGCTNCCTTTTTTTA  
NAATCCTAACCGGGCCTTGGCTNCCNAAAGGCGNTTNCCTANAAAATTTTTCCCTTTNTGGTAAGGN  
CCTTTTTCNNAAAAAATCCCTCAAANAT

10 TNNNACAAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGC  
NNTAGTNGAAGCTGGGGCANGAACAGGCTGAACCGTGTNCCCTCCCTTAGCAGGCANCCTACCCCATG  
CAGGAGCTNCAGNANATCTAACCATTTTTCTCTTTNCACTTANCAGGAGTTTCCTCAATTTTAGGAGCCA  
TNANNTTCATTACAACANTTATCAACATANAGCCCCCNGCAATGTCACAATACCAAACCCCTNTGTNC  
GTATGATCCGNAATANNTACCGCCGTACTACTACTCTNGCTCCCTGTATTANCAGCCGGCATCACA  
15 NTGCTATTAACAGACCGGAACCTAAATACAACCTTCTTCGACCCGGCAGGAGGAGGAGACCCCTATTCT  
ATATCAACACTTATTCTGATTCTTTGGACACCCCGAAGTCTATATTTTAATCTTACNTGGGGTTTGGAA  
TAATCTCTCATATCGTGACCTACTACTCAGGAAAAAAGAACCATTTCGGATATATGGGAATAGTTNGG  
GCTATAATGTCAATCGGATTTCTAGGTTTATCGNATGAGCCCACCATATATTCAGTGTCCGGAATAGAC  
GTCGACACACGAACCCCTACTTACATCAGGCCACTATAATTATTGCTATTNCCAACCGGGGTAAANGTC  
20 TTCAGCTGAATGGCCACACTTCATGGANGNAATAATCAAATGGGGCTCCTGGTATAATGNGAAGCCCT  
AAGCTTTTATTTTCTTAATTTACCGGGANGGGGGTTTAACTGGGAATTGNNTTAACCCACCTNTTTCC  
CTNNNANATTGGTNTTTACGAAACCACTTACGTTGGNNGNACAATTTCCCCTTTTGTTTAATCAA  
AAAGGAGCTGGTTTTTGCNTNTTTATANGGGGGGGATTGTATTGGATTCCCCCNTTTTTNTAAGGGT  
TAAACCTTTCAANGNTTCTGGAACCCAAAATCCCCTTTNNNAANTTTT

25 GATCTCAGAGGGGGNGGNTGCGCNCNCCNNTACNNAACANACNCGCTNNTACTTNNNACGCNNNCTA  
TCNCCNANTATNNCACNCGTANTACGTGCNCCNGCGTCACTCCGNACTGCNNGGNACCNCCTGCTNNT  
CCNATCAATTGATANNTCCCTNCNNTTTTNNCTCTCTTCTTCTNTCTACTNNACTNNTNANTGNN  
30 ANNATGNANCNNGNCAAGTGCTANCTANGCATCANCNNTTNGCAATCACCNNAATCANATANGGTGT  
CTGCTNCTTNCANTCTNCNNGTNGCCNNTCGCCGNTCCNCGACGCCNNGCNCNCCAGNANCNTNCTA  
TTCTAANNANNATANAGNNGGNACNNAGACCGGGNCCGGTNCNTNTNNNNNTATNNAAGATAAN  
NNNATNGGCNNNNGNNGNNTGTANNANTNAATACTNTNCCNANGNNNNNNNGATNGNGNANGAA  
NTTNNNCNNTGTGGGNNNGNCACTNGTANNNAANTGTNTNNTTNCNNACTGGNNGGNCCNGAA  
35 NTNNANTNANTNCNANNNNCNNGNNGNNGNNTTNNCNTNCTCANNNNGNGNTNNNGTGNGGNC  
GNGGNGANNTCNNGNNTANANGNGNGNGTTTNCNCTCNGANNNNNNTNGANNTCNNTNNNCGNTG  
CGNANNGNAAACNNTCNATANNNTGTNCTTCTNANNCTNACCNTTGANGNNGNNGCGNGGCAANTNN  
AAAATCATNNANNGNNNANANGNCNGGANNGNNNTNANNNGANCCNGNNGAGATNNGGNACCAGC  
NTNAAANGNNTNANNAGTNTTAGANGNANAGGNNNTCNTGAGANNGCTAANGGNAANCCNNGTNA  
40 GTNNGCANNANNCNCGAGANCNTTNTATGTTTTTANNNGACANCANAACCGNTNNNCNTCGNCATC  
TNTTNCCTTNNNAATCNATNGGGCCGCCATGTNACCANNANANCCANNTCCCNGTTTNCNNNCTNC  
NTNNTTAACTANNNNAATCNACTANGGGNTCTGCAAGCNACNCANANCNNGTTNCNCCNGTNCN  
NACTGNAAGNCNTNAANCNCANTNNANAGTNGCNGNANNNTCNCGCGGNGCNNNTNCANAGNNNT  
CGNCTNAGCAGCANAANCNGTNGTACNTCACAGGANAACNCCAACGGGNANCGTGGAACNNNNNNN  
45 ACNANNNANTNACNANGTTCAGATCANNAGCGTANCNNNNNGNCGNNTAGACNNANAGAGTNCNC  
TGTNAATATACGNACNCNNGNCGANANTANAANANATGCTGNGNCCTGTGACNTNATNCACAGACN  
GANTACNCNCAAACNNAATNATATCGCNNNCNNNAGANAGCATNAGNNANANNACGTNACGTNAGA  
GAGANNANAGTGATAGNGCGCNANGACCG

50 TTTNANCCTATCTGGAGCTNCACCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGCCTGCAG  
GGGAAGTGGGAGCGTTGTCTGATTCTGGCTTTAACTCTCGTGCCAGTGCTTAGGCTTTGGCAGGGGTG  
NTTTNAAANNCAATTNNTTTAANNNGGNCCTTGNCATNGNANNGANNTNCANAAATNGNAAAAANNGG  
GANTNGNNGGNAAANANNGGCCAANNNNNACNNGNCCTNNNTTNGAAANNGNAAANGGAAANT  
55 NNAGNNGNNNCNTATNNAAGCCNCTNCNTNTANCAANGGAAGAANTNNCCANTNGGAAACCATG  
GGCGAAAGNATATATTTGGGCCCTTTGCTTCTGNGCATTCNTTTGGAGGCCACGCGGCTGTGCGCTGTG

ACACACTGTGCCNCACACTGTGGCTCTNNACCNCGAAACAAAGGGCTACTGTGCCCTCTTANACAANC  
TGTTTTCCAGATACCCNCTCAGAAACACACTCTTGTGCTGNCNNNAGAGCGCTATGCCCTTT  
GATGTNCACGCTNNACAGAAAATACCNNGAGAGTTATTTCCCCNCAGAAAAACCGTGGATCTCTG  
TGACGGGCATCCTACNTGGTGGNGTGGTGTTCAGACCNCCCATNATNGGGTGCTTNTTAATACCCTT  
5 TTTTCTTGAGGGAAACNTCTTCAGCTTCTTTCNTCATCNTCNNAACTTTNTTCCAAACAATCATCCCTGG  
GNNGGGGTTTTTANAAATNTTTTTTTTTTCATTNGGNNNGCAAGCANGGGTNNTTTTTNTTTCTAAAA  
AAATTCCTTGCCCCCNCAANTNATTTTTNTTGNANGGGAGTCTTACCTTGCGNGNTTNGGNTTGGGG  
GGGCCATCCGGGAGGGAAAAATCCTCCACCCAANAANAAAAAAGGGNTTTTGNANGGGAATTTTT  
10 CCCACCNTTTTTTTTNN

TTTNANCTATCTGGAGCTNCACCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGCCTGCAG  
GGGAAGTGGGAGCGTTGTCTGATTCTGGCTTTAACTCTCGTGCCAGTGCTTAGGCTTTGGCAGGGGTC  
15 NTTNAAANNCATNTNTTAANNNGGNCCTTGNCATNGNANNGANNTNCANAATNGNAAAAANNGG  
GANTNGNNNGGNAANANNGGCCAANNNNNNACNNGNCCTNNNTTNGAAANNGNAAANGGAAANT  
NNAGNGGNNNNCNTATNNAGGCCNCTNCNTNTANCAANGGAAGAANTNNCCANTNGGAAAACCATG  
GGCGAAAGNATATATTTGGGCCCTTTGCTTCTGNGCATTCNTTTGGAGGCCACGCGGCTGTGCGCTGTG  
ACACACTGTGCCNCACACTGTGGCTCTNNACCNCGAAACAAAGGGCTACTGTGCCCTCTTANACAANC  
20 TGTTTTCCAGATACCCNCTCAGAAACACACTCTTGTGCTGNCNNNAGAGCGCTATGCCCTTT  
GATGTNCACGCTNNACAGAAAATACCNNGAGAGTTATTTCCCCNCAGAAAAACCGTGGATCTCTG  
TGACGGGCATCCTACNTGGTGGNGTGGTGTTCAGACCNCCCATNATNGGGTGCTTNTTAATACCCTT  
TTTTCTTGAGGGAAACNTCTTCAGCTTCTTTCNTCATCNTCNNAACTTTNTTCCAAACAATCATCCCTGG  
GNNGGGGTTTTTANAAATNTTTTTTTTTTCATTNGGNNNGCAAGCANGGGTNNTTTTTNTTTCTAAAA  
25 AAATTCCTTGCCCCCNCAANTNATTTTTNTTGNANGGGAGTCTTACCTTGCGNGNTTNGGNTTGGGG  
GGGCCATCCGGGAGGGAAAAATCCTCCACCCAANAANAAAAAAGGGNTTTTGNANGGGAATTTTT  
CCCCACCNTTTTTTTTNN

TTGANAANANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGG  
CTNTGCTGANGGTNACATTNAACTCCCNCGANTTCAGNNNCATNTNTNGGNGTGANCNTATGGNNC  
30 ANNACATNCNGGCCAANATCAGGANCTACCANACTGNTCCTTNGACNGNCGATTCCCCAACCNAA  
CCANACCANGAACTGCTGGCAGAACTACCTGGACTTCCACCGNTGTGACAATGATNTGACCCNTNTG  
NCNGNAAANTTTCTGTNTGTGAAAGGNANCNGCGNGTNTTNTNTCCCTGTGGCCNNTAAAAANNCTG  
NNNNNTTNGGANACNANCCNAACANAAGGCACGTTTCTGGGANGATCTGAACTGGCTCCATCCCAC  
35 CTNTTNTGTCTCCTCCTTCTCCCCAGGGTGGTGAAGGGGGACCGGGGTACATGGTGATCCCNACCT  
GGGATCCTGACNGATGGNATACTAATACTAAATGCTCGANGGAAACGTGAAAAAAAAAAAAAAAAA  
AATTTTTTTTNGGNNAANNAANGNNGCNGNTGGGGNCCNNNNNGGNGGGGGGTGTNTNCAAGGGTNGGN  
NNTTNAAAAANNTTTTTTTTTTTTTTTTTTTTTTNTTTTTNAAAAAANNNNGGNNNNGGTNANTTNGGTTNNTTT  
40 TNCNANCCCCCCCCNCCNNTTNGAAAAAANNNCCCCNGGGGTATNTTNGGGGGTTTTAANGCCNTT  
TTNGCCNNNNNNCCCCNACCCCCCNNTTNGGGGGGGGGGAATTTNTTTTTTTNNCCCCCNNTNAAAN  
GNNNNNCNNNGGCCCCCAAAAAAGNGNGGGGGGGGNNCCCCCTNCTTNNNGNACANAAANNAACC  
NTTNANCCNGGGGNNTTNNNTNANAAAAANCGGGGNTTTTTNTGGAAAANTTNGGNGGGGGGN  
AAANNAAAANTNGGGAANAANAATNTTTTGCCT

NAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGCGCTG  
CCCGGCCGCGCCCTGGCGAACGTGGCCGACACGAACTGTACGACATCCTGGGCGTCCCGCCTGGA  
GCCAGCGAGAACGAGCTGAAGAAGGCATACAGAAAGTTAGCCAAAGAATACCATCCTGATAAGAATC  
CAAATGCTGGTGACAAATTCAAAGAAATAAGCTTTGCATATGAAGTACTATCAAATCCTGAGAAGCGC  
50 GAACTATATGACAGATATGGAGAACAAGTCTTCGGNAAGGTAGCGGTGGAGGTGGTGGCATGGATG  
ATATTTTCTCTCATCTTTGGTGGAGGATTATTTAGCTTTATGGGTAAATCAGAGCAGAAGTCGAACCG  
GCAGAAGAAGAAGGAGAAGACTTGATGCCNTCCCTCAAAAGTTTCTTANAAGACCTGGTNTATGGGC  
AAGACANCCAACCTACAGCTTAACCAGGAATGTNCTCTGGTATGGCTTCCANGGGCCAAGGGGGGNA  
GGCTNGGACCTGTCAAAAAGTGTAATNGCCTTGGTCCGGGGGCCNAGGGGGNCNCATTAATGAACAAA  
55 ACAGCTGGCTTCCAGGGATGGNGCCACCAAATCCAGCTGNGGGGGTCTGGACTGGAATNGGANAAGG  
GAAAGGTAATTTATGGAAAAGGGNCCGTNGTAAAAAANGGGANGGGAAAAAAGGGGNTTAAAGAA



NNCAANNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAA  
TTCGGCACGAGGGGCTGTACGCATGCGGGGAGGCTGCCTGCGCCTCGGTGCATGGTGCCAACCGTCT  
GGGTGCAAACTCGCTCCTGGACCTGGTTGTCTTCGGCCGGGCGTGCGCCCTGAGCATCGCAGAGTCTT  
GCAGACCCGGAGATAAAGTTCCCTCGATTAAACCAAATGCTGGGGAAGAATCTGTCATGAATCTTGAC  
5 AAATTGAGATTTGCCAATGGAAGCATAAAGACATCGGAACTGCNACTCAACATGCAGAAGTCGATGC  
AGAGCCATGCCGCGGTGTTCCGTGTGGNGAGTGTGCTGCAGGAAGGCTGTGANAAGATCAGCAGCCT  
CTACGGAACCTGCGGCATCTGAAGACGTTTCGACAGGGGGAATGGTCTGGAACACTGACCTGGTGGAG  
ACCTTGGAGCTTGCAAAACCTGATGCTTTTGTGCTCTGCANACCATCTACGGAGCCGGAGCCCCGGAA  
GGAGTCGCGCGGCGCCACCCAGGGAGGACTTCAAGGAGAGGGTGTGACGAATACNATTACTCCAANC  
10 CATNCAGGGGCAACAAAAAAACCCNTTTGACACACTTGGAGGAACCCACGCTNTCTACGTGACATCA  
AAANTGGGAAGGGCACCCCTGAGTCAAACCTGTATCGAAAACTTTTAACGAAAACTGATTGGNCCAT  
GTTTCCCCAANCCTTCGNTTTTAAATGAGGANAAANGNGTTTCCCTGGCCCNNGNAATAANNANAAA  
ANCCNCCCCCCCCGGTTTAGGGNNNNNCCCCNTTTTNNATTTGGGCCCTTNNNNAANNNGGGGGGGG  
CCTTTTNNNAAAAATNCTNNNNNAGGCCNNNNNTTNNCCNNNNGGGGGTANNNNNNNNNTTNNC  
15 CCGGGNNTTTTTTTTTNNAAAAAAA

TTCTCAAGGGNNGGTGCGGANGCGAGCCTCACACGTCCCNNTNNAACNACCCNCTGGANNTCTCCNTNA  
CNTGCGGCTGAACGCGANCCCTCNTATNCNGTGTGCNCCCCNAAACNNGANATANCAANNCCAGCCA  
20 CNNAGANNTTTCGTATTCTANANGGTNNCANTTANGNAACCCNTGGGGNNTTCCNTCATNGCTCAG  
NACNTTCTAAGTNNNTNAAAGCGCCNNAANTCNATGCNCCACTTNGCCGNAACGNNAGNGNGGANCA  
AGANNGNNNCCNANNNAAACNGNGTTTGNNGCTNCNANGANNNAANGNNAATNTNTNNTNNNGG  
NANTGGGNNCCNGGNGGNNNTNNTNNTNATNGNGNGTNNAAAGNGGNCAGTNCAANTCTCANGNN  
NNCNAATTGNNGGNNGNNNACGGCNANTNGCNTGNGNGGTNGNAGNAGCGNNNTGNTTCNGNGN  
25 CGNCTAATGCCCTATGGGNNNNNACNNTNNNNANNTNNANGGGGNCGGCCNGGCNNGNNTNTNTG  
AGATGNNNTGNGTTGATNNGNNNNNACATNNTTNTTANNNGGTNNNANANNNGNGNNNNCNCNNG  
NNGTNNNTATNNNNNGGANNNNTGGGNGACNNNGAGTNAATNNNGTNNNNNTNNNGCAGAGGNGAC  
CGNNGNCAGNNTNNGTNTNTNTNNTNAAACCGNCCCGAANNNGCTAATGNGTGGNTCNANANANTCAG  
NNNNNNNNGGNGNATNNNNNAGGTNNGANNNGNNGGNNNGGNNCANNATNCGGGGGGANTCCG  
30 TTNNNCTNTGGNGNTTAGNGGANNCANNGNACGTGNTNGNNNGACANNNNACCCNNCNCNTTGT  
AAGCTTCTCNANAAAGNTAGGGCGGCCAACCCNTCTCCCTCTNTCCTCTTCATNNAAGTCTTACCNCN  
ANGGCCNNNACCGNGCCTNNTGCACTTNTGCGNNNGCCTACGNGNCNGTGCAGTACNGTGNNT  
NNNTGCNNGGAANNCCNNCNCGTNCGTCCGNANTACNNNGCGGCNCTNCNNAANTCNCNGTACN  
CNCCTGCNGCNGCACGNNNGNGTGGTNTCTGNACANAGTTNGCTNTGAGNAGTCNCNGNCCNNTNTN  
35 ACTNANTGNAGCGTAGCGGAGAGANCAGAANGGCANGTCGCCGCTGNNCNGTAGNNANNCTGNCAN  
NGCCGGNTGNNNTNTNTTGTCAACGNAGCGNCCACAGTNGNGANTGCNCTNGNGNGCGGCGNGT  
NAGGNNAGNAGTCGTNTGCNCCNNGNGANATCGCGAANCNTNANANAGCCG

TTNAGCCTATNTGGAGNTNNANNNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGNAG  
GAANTTCGGCACGAGGGCCACACCGAAGCCTACCCAGCTTCCTGTCTGTGGAACACTCGGGCCTGGG  
GCTGGNCCCTGCCTATGGGTNTTACAAANCCNTACGGAATNACNTTCNANCCGCGNGCGCCANNAC  
CNAGGGCCNGCNAGGNNCCAAANCCGGGGNANCNACCCGNNCNTTNCNNANNNNGNCCNNGNTT  
CNCNNTTNAACNNGGCTTCCTNGAACCAANAANNTTCCGGTTTAAAAACNNGACTTTTAGAAAGGGA  
45 NNCCCACCCNGNAACNGGCTTGGAANTTTTACCNAACTTNACCAANTTTCCACTTTTNAACGGTTACG  
CGAACACATTCACANGGCACANGGAAANNCCCATCCACNGGGAGAGTGTCCGGGTATATCAAAACA  
GGGGGACATNNAGAGAGTGNAGACACCTTTTANNCTATANCACTGNGNTCTCTTTGCCCAAANNCC  
NAGAGAGNGTGTGGCTTTGCNCGGAAAAAGANTGTGGANACCCANAAACCCCGGGCGGGGACTTTT  
NACANAGAGGTGTGAGTGNCCCGGANTANTGCAGTGGNGGATAAAAAATATATATNTCTTCTANTN  
50 TTACACCCNNCNTTTTGGACTACNCCGAGGNCNCCCTTCTCTNTTTNNANGNGGTGGGGAG  
GGGNGGGGCCACAGGACTTCTCCCCCGCTTGTGGAAGNCCCAACCCCGTTGNCNCCNNGGGGCGC  
NGNTNTTTTNTTTTTTTTTTTTNAAGACCTCTTTTCTTGNNGGGGCCCTTTTTTTTNNCCCCCCCCNGT  
TTNTCCTTTTTTNCNTNCNTTTNNNNNAAANNNGGGGGAAGGGGGAACCTTTTTTGGGAAAAAAATTC  
55 NNTTNTTTTGGAAAAA

TTNAGCCTATNTGGAGNTNNANNNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGNAG  
 GAANTTCGGCACGAGGGCCACACCGAAGCCTACCCAGCTTCCTGTCTGTGGAACACTCGGGCCTGGG  
 GCTGGNCCCTGCCTATGGGTNTTTACAAANCCCNACCGAATNACNTTCNANCCGCNGCCANNAC  
 CNAGGGCCNGCNAGGNCCAAANCCGGGGNANCNNACCCGNNCNTTNCCCNANNNGNNCNNGNTT  
 5 CNNCNTTNAACNNGGCTTCCTNGAACCAANAANNTTCCGGTTTAAAACNNGACTTTTAGAAAGGGA  
 NNCCACCCNGNAACNNGGCTTGGAANTTTTACCNAACTTNACCAANTTCCACTTTTNAACGGTTACG  
 CGAACACATTTCACANGGCACANGGAAANCCCCATCCACNNGGAGAGTGTCCGGGTATATCAAAACA  
 GGGGGGACATNNAGAGAGTGNAGCACCTTTTANNCTATANCACTGNGNTCTCTTTGCCCCAAANNCC  
 NAGAGAGNGTGTGGCTTTGCNCGGGAAGANTGTGGANACCCANAAACCCCGGGCGGGGACTTTT  
 10 NACANAGAGGTGTGAGTGNCCCCCGANTANTGCACTGGNGGATAAAAAATATATNTCTTCTANTN  
 TTACACCCNNCNTTTTGGACTACNCNCGAGGNCCCCGCNCCCTTCTCTNTTTNNANGNGGTGGGGAG  
 GGGNGGGGCCACAGGACTTCCTCCCCCGCTTGTGGAAGNCCCCAAACCCCGTTGNCCCCNGGGGCCG  
 NGNTTNTTTTNTTTTNTTTTNTTNAAGACCCTCTTTTTCTTGNNGGGCCCTTTTTTTTNNCCCCCCCCNGT  
 TTTNTCCTTTTNCNTNCNTTTNNNNNAAANNNGGGGAAGGGGAACCTTTTTTGGGAAAAAAATTC  
 15 NNTTNTTTTGGAAAAA

TTNAAAAANTCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 CGGACATGCTGGTCTGTGCGAGTGGTTGAGATGTCCATCCTGGAGCCTGACGTGCCCTCCCACTAGTC  
 20 CTCCTCTCCAGCCAGCTACCTCAAAGTCTTCGTCCCCAAGCACACCCAGGAGCTGCGGCTGGAGCT  
 GCAGGGCTGTGTGTCCAATGGGAGCCTGGGCTGCCCTGTGCACCTTACCGTGGGGTTCGGCCACCCTGC  
 CAGGAAACTTCCAGAAGGTGCTCACTGTAGCGATCCCACCACGGCCTGCCGCTGTTGTTGCCCTNAC  
 CACNTGGNAACGGNGGTTGCAAGTGACGGCCAAAAGCCTGGCGGGGCCCCGCGTGTGGNNACGTT  
 25 AATNGCCGGGTTGCCTTNACAGCTTGCANACCGTGAATTGCNAACTTCAANGGCNTTTTGA AAAANA  
 AGCCCNAAACCAANNAGCACCGCNTCCACGGGCCCGCCGCCCTTGAGCCCCAACCCAGGACCTGG  
 ACCAAAGTGGCNAGGCAGGCAGNGGCCCTTTNTGNTTAAGGAGCTTCCCCATCCTGCGGGAAAAAT  
 GGATGTGGNGTTTGGGCCCTTTCGGCCCCCTGAAAAGGGCCTTGGNGGCTCGTGCAAGTCGGACATT  
 GCCTTAAGNGATGAAAATTGCNCCTTTAAACACGGGCATGGGACAGNNGGGGGGCTTCCTGAACANTTT  
 30 TTTGGGAACCGTAAACCAAAACCGNGGATTGGCCAAACACCACCTNNGGGGGGGGCTTGTGNGA  
 ACCGNCCGGGTTTGCCCTTTTNTTNAATTTTAAAAANTTTGNTTTAAATTGNACCAAAAANCTTTTTTT  
 CAAGGGGTAANCCCCCTTGGCCCCCTTGANNGCCTTNGTTTTCCCAAAGNCAAACCTTAAAANTTCCC  
 TTACCCAAANAAAAANAAAAATTGG

NAAAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCCGN  
 CAGGACACAGGTGTGNTGAAAACACCGTTAAACCTAAGCCAAAATGGGAAAGGAGAAGACCCACAT  
 CAACATCGTTGTCAATTGGGCACGTAGATTACGGGAAGTCTACCACGACTGGCCATCTGATCTACAAAT  
 GTGGCGGGATCGACAAGAGAACAAATTGAAAAGTTCGAGAAGGAGGCTGCCGAGATGGGAAAGGGCT  
 40 CCTTCAAATATGCCTGGGTCTTGACAACTTAAAGCTGAACGTGAGCGTGGTATCACCATTGATATCT  
 CCCTGTGGAAATTTGAGACCAGCAAGTACTATGTTACCATCATTGATGCCCCAGGACACAGAGACTTC  
 ATCAAAAACATGATTACAGGCACATCCCAGGCTGACTGTGCTGCTGATCGTTGCTGCTGGTGTGGT  
 GAATTTGAAGCCGTATCTCCAAGAACGGGCAGACCCGTGAGCATGCCCTTTTGCTTACACCCTGGGT  
 GTGAAACAATAATTGTTGGCGTTAAACAAAATGGATTCCCTTGANCCNCCCTATAGCCAGANANATN  
 45 CNAANAAATTGTTAAGGAAGTCAGCNCCTATNTTAANAAATTTGGNTACAACCCCGACACAAGTACA  
 TTTGGGCCAATTNTGGCTGGAATGGGGACACCATGCTTAAACCCAAGGCTAATTTGCCCTGGTTCAA  
 GGGATGGAAAGTCNCCCGTAAGGGCCGCAATTGCCNATGGGAACCCCCCTTGNTTGAAACCTTTGGA  
 ATGGANTTTTGGCACCAAAATTTGNCCAAATGGAAAAANCCCTTGGGGTTGGCCTNTTNCGGGAANGTN  
 NTTAAAAATNGGGGGGGTTTGGGNCCTGGCCCCCTTGGGGGGCCCGGNGGGNAAACTTG

TTNANAAAAATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 CGAACAGTCCTCACGCCGATCTCTTTNCTGGNTCCACCCCGCGCCAGGTGACACGGAGAGCTGACACC  
 ATGGTTCATCAGNGCTCTACCGGGCGCTGGTCTCCACCAAGNGGCTGGCGGAGTCCGTNCGGGCTGG  
 TAAGGTGGGCCCTGGCCTTCGGGTGCTGGATGCGTCCTGGTACTCGCCGGGCACCCCGGAGGCCCGCA  
 55 AGGAATACCTGGAGCGCCATGTGCCCGCGCCTCCTTTTTTGTACATANAGGAGTGTGGGACAAGGCC  
 TCGCCTTACGAGGTGATGCTGCCAGCGAGGCGGGCTTCGCCGACTACGTGGGCAGCCTGGGCATCAN



CAACGACACGCATGTGGTGGTGTACGATGGTGACGACCTGGGCAGNTTCTATGCGCCGCGGNTCTGNT  
GGATGTTCCGTGTGTTNGGCCACCGACCGTGTCCGTGCTCAATGGTGGCTTCCGGAACCTGGCTGAAG  
GANGGCCACCCGGTGACATCTGAGCCCTTACGCCAGAAGCCAGCCATCTTCAAAAGCCACGCTGAACC  
GCTCCCTGCTCAAGACCTACGAGCANGTGCTGGAAAACCTTCGAATCAAAAAAGGTTTCAACTTGGTG  
5 GAATTACNNGGCCCCANGGGCGGTACCTGGGCACACAAGCCGGAANCNANATCAGTAGGACTGGAAC  
TCGGGCCACATTCCGAAGGCTTCGGTCNACATTGCCCTTTCATTGAACTTCTTAAANGGAGGAATGG  
NTTTTNAAAAAAAACCCAAAAGGAAACCTCCCTTGGCCTTGTTCGAAGGGCCCAAAAAAGGNGGGA  
CCTTTAANAAAAGCCCTTTTTTTGGCCCCATTGGCCCGGGAANGGNGTCACCCCNCCTTGGCCCAATT  
GGCCCTGGGTGNTTTAACCTTTNGG

AGCCTATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
TCGGCACGAGGGTTTGCCGCGNGGACACAGGTGNCNGGAAAACCCGTTAAACCTANTCCAAANTG  
15 GGAAANGANAANACCCNCATNAACATNGTTGTCATTGGNCACGTAGATNCAGGGAAGTCTACCACGA  
CTGGCCATCTGATCTATAAATGTGGCTGGGATCGACAAGAGAACAAATTGAAAAGTTCGAGAAGGAGG  
CTGCCGAGATGGGAAAGGGCTCCTTCAAATATGCCTGGNTCTTGNACAACTTAAAGCTGAACGTGAG  
CGTGGTATCACCATTGATATCTCCCTGTGGAAATTTGAGACCANCANGTACTATGNTACCATCATTGAT  
GCCCCAGGACACATANACTTCATCAAAAACATGATTACAGGCACATCCCAGGCTGACTGTGCTGCCCT  
20 GATCNTTGCTGCTGGTGTGGNGAATTTNAAGCCGCTATCTCCANGAACGGGCAGACCCGTGAGCATG  
CCCTTTTGCTTACACNCTGGGTGGGAAACAACTAATTGGTGGCGNTAACAAAATGGATTCCACTGGAC  
CCCCCTATAGTGAATCNNNATTACCANNGGNGGNGAACCCCTNNAANCAANAGGNTTTNANNTGGG  
GGGNTTNNCGNCCCNNGGNNNGNN  
NNNNNGNN  
NNNNNNNNNNNNNTTNNNAAANNNNNCCNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
25 ANNN  
ANN

GNNCCTTANTAGNGGANGNGCGGCAATNTAACNGNNGGGGAGGTCCCCANTTACCATTAATCTGCCTN  
NCATCCCCCNCGGAGCCTTGTCATGAGCANATCNCGGTCATCNGAGGAGAGNTTTCACGNGGTCTCTT  
30 AAGAATACANGTGNCNGTGTCTCAGGGGGGATCTGNTAATNTANTTTCTCCTTCTNTNAANCCGTNA  
NAANNNNCNATACACNAACGTANANTNAAAANTAANNNTCTTNNANATTTCTTNCAGNAGCGNNCAN  
CCGCGCNGGCCNACTCNGTNTCAGNCNNCTNTTNNANNANGTAAAGNAGATNNTNGTGGAANGGN  
AGGNTANNCNANNNNGNGNATTGTNCAGCAGCTNNTNNGACTNGNGNANGNCGNNTTTATNNAGGATC  
TNTAAAGNNNNANNNNNNNNNNTNNNANTTGCTNCTNTATNTNGAGGNGGNANNNNNNGNGNANTGN  
35 TGANGATNAATTNNNNGCGNNANNNNANTTTANGNGTGGNGTNAACNNCNCNGNAGNCGCATNANN  
ATTANNTGGNGTNTNTATNTTTACNGNTATNCTATNTGTANCCTCNTNTNTNNNCGNCNNCNGCNCN  
NGNTTTNNNTNTNTNCTATNATNNGNTCACNCNNNGNGNTCNAAGNNNNGGCTGGAGCTACGATANC  
GAATCGATCNGGTNNNGCNCNGNNTTGTNTCANTGCNNGGNGCGCTGGCGNCGCTAGGCNTAANN  
TTNCNNCCATNAANNANGANGCAGNCTACNNANACNCACTGACNGNTGATTACATTAGATTANGANNAN  
40 NGANCANCNGNANTTGTANANACTGCGTNCNNCAACGNAGANGNNNGCTNGANACNNTGNGNNT  
CTNTGNNCTNGTCAATNNGNACANTNNGNCNGGNAAGGCAGTAGNNNAGTAATTCNCGCGNCANTNTA  
GCTNNGGACNCNGGANCGTNANGCCNNNNNTGTNNAANNNGNGNCGGCNATNNGNCNTANNNTNAN  
CANTGNNGCGCGCANTTGTNATCTCCNCGCAGGNAAGATANCGAGNCGNNNGTGNGNGCTNTCNGC  
TATGGCNGNANTCGCNNNCGTAANAGAGTGATNCNCGNNGGNTANGCCGNGTNNNNNANNCGCGN  
45 NTGTGNNNCGNNNCGNGNCGCNGACAGANTNCCNCGCNGCGANTNTNCANCTANNNGNANCANAG  
AGNGCTNGTNTNTNNNGAAGTTACGNNTTANNCAANCGNTAGTNNGTNTNANCANCGTCCNCNCGA  
ANTNCCACNTCGTTGGTGTNTTANTNGNANNCGTGNGTAGNTATCANTGNTGANAGCGNGNGGNG  
CTGGCGTNNTCGGATANTTCNGNGNCANTNAGNATGCGCGNTAGACAGTNANCNGNGGNGNCATN  
AATCNGNGNTNGNCGNACNGTNNGCGACANAGTNANNTCGTGNCGANCAGTGACTNTCACGNTCNCN  
50 NNANTATCACNTNCCG

GANTNNANTGNNGCCGANTCNCNGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGANT  
TCNNNCACGAGGANATNTCTTTAANAGTAGGAGAGGGGCCAATAGCTGNCATCATGACTCCAACCTCT  
55 AAACCNGGNTTACNGATTANTAANNANGNCNNTCATNANTCACNANANCCTGGNTCNTTATACNCN  
CGCTCNCAATTNCNAACNNTTTNTNCNCNTCNCNNNNNTNTCTTNNNTACANTNCNTNNNTNCATCTNN



NANCACTCTAGNNNTANTNCCGACATTCCNCNCNNCNTNTNCGNNANNCTNNNTNCCCGCTNTCTNCT  
CCNNAACTANTCTGNCATATCNCNGAGCCNCGTANTATGNACTTNNNTNCTNNNNAAATANCNNTNTT  
NCCTTCTNANCCNNGACCTCTTNTCTNCTNATNNNCANCCNNNACCNTCTTGTTTNNNNNGCCCNAT  
NNNTTNNNGNTNANNCTNNNTCANNTNNGCNTTACTCGAATNCGTATNNNATGTTNACNTTCTTNTCTT  
5 TNTNTCCNTTATTNNCTATNNCCANNCGNAACNCNTTTTNCNTNCCNCTCTATNCAACGTCTNCCNCC  
CCCTCTGTNCNACNCTNCTNCTNCGGCTNNCNTANTNCGAGNCNNCCNTTANCTGGGTCTNCGNGCTTC  
NNCNAGCTNGANGNNCNTCNCNCCCNANANCTCCNTCCCTTCTCTCTGTATCCCTCNTGNNTNCANN  
TCTATNNNTCNTATTNNNTNAGTNCNANCANNCACCCNANTANTNNNATNCCNTNNTACCNCNNCTCAN  
NNCACCNNATNNNTCATNTACTAGNTTCTTNTCTCGCACGNNNCTCGCCTCTCTGTCTCTNTTNTNCTC  
10 TGTATTNCNNTNNCCNTGTTTANNCTTCCTACATCGTTNNTTTNCTNCTCTCTTNTTTCTCTNTTTNNA  
CNACCTACTNCTTCTTCGTCTTNTTATCTNNTACTCNCNTTTCNGTTCCCTNCTCATCCCTCTCNAAG  
NNTCNCNTAACNTTCTCTAGCTTTTNTNTNNTGNATTCTCNGNNTCCCTCTCTCCTACNTACCCCNCCNGN  
AANTCTCTNNACCATTCTTCNNCCTCGGCTCC

15 GCCCTATCTGGAGCTNCANNCNGAGNGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
ATTCGGCACGAGGAGAGGTGCAACTTCTTCGGTCTGTCCTCGAATCCGGGTTCATCCGACACCAGCCGC  
CTCCACCATGCCGCTAAGTTCGACCCCAACGAGATAAAATGTACCTGAGGTGCACCGGGTGGGGGAA  
AGTCGGGGNCCCGNTCTGGCCTTGNCNCCCAANAANCGGGCCTTTGGGNCTTGCTNCNAAAAAGGGCG  
20 GGGATGACNTNGCCNANGNNACTGGNGANTGGAAGGGNCTGNAGANTACNGGGNAACTGNCCNTTC  
NNAACNAANNANCCNAAANTGNNGGGGNACCNTTTGNTTNTGNCCNTNNNATTAANCCCTTAAGGN  
ACCNCCAGGGACCGAAAGGCCGAAAAACCTTTAGCNCNNNGGAAACNTTACTTTTGATGAAAAAN  
GNCAACNTTGNCCNGNANANGCNGGATTGGNCTCTAACTNNANAACCTTTNTGGAACNTTNAAGAGA  
TANCTGGGGACCGCGCCACATCTGTGGGGCTGCAATGTGTGATGGGGCGCCACCCCTCATGGACATCA  
25 TTGANGATATNNAACACTGGCGCCCATGGAAATGCCCCCCTTGTAAANAACGTGCGCAGGGNNAAT  
ATAAGNGCCCTTTTTCACACCNCAAAAAANNTTNGGGGGGGGGGGCCGGGNACCCA  
ANNTTCCCTTTNNNNNGGGGGGNGNNNTTAAACNCCNNNNNNNNNNCNCNTCTCNCNTNTGTNNNNNN  
CNTNTNNNTNNAACNNNNNATNNTNCTCTNNNCNTTNTNTNTTCTNNNNANATNNNNNTNNNTNNNT  
TTNTTNTNNCTTTNNNCNTTGNNAANTCNNNGGNTTNAANNNCNTTNNCATTNNNNCNTNNTNNNTN  
30 GCTNNTNCNNNTNNTTNTCTTNTNTNTNNTC

TTNAGCCTATANNAGNCGNATTACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGNAGG  
AAAAAAATTGTAGGAAGTCAGCACCTNTNTTAAGAAAATTGGCTACANCCNGNCACANTATGCATT  
35 TGTGGCNAATTCTGGGCTGNANGGGGNNCAACNTNCTAAACCNAATGNCTATNANNCCNNGGTTNAG  
GGANNGNAAGGCANCCGNNAGGGNCGGNATNGCCNNGGAACCNCCCTNGNTNNAACCTTTNGATTGG  
ATTNTNGCANCNACTTGCCCNANTGNNAANCCTTGNNTTGGCTTTTCCNGNNGNCTATTAATATGG  
GGGGATTGGTACTGGCCCTGTGTGGTCATGTGTGAGACATGGTGTCTCAAANACTGTGNATGGTGGT  
CANCTNTTGCTCTACNCGNATGTGNACACACTGAGNATGANACCTTGTGTAAATGCNCCNCTGTAA  
40 NCATTTTGTGAAAACCTNTNCGNGGACACATGTGNGCTTTTATNTGNAAAAACACGTTTTGTNTA  
AAAAATATCCCCCTTGGNANATNTGNGGTGTGGANCANCAAAATGANCCCCCCTNGGANACNTN  
NCTNNGTTTNCANNCTCNCGANGNTTTTTNTTGNAACTNNACGGGCNNNANACAGAGCTGGTATNTTG  
CCCCNNGTGNTCTGNANGTGTGNCACCACANCTCANTAGCTTNCANANTNNGNCTGNAGCCCNAGA  
NAAGAAAAAATAGATNNTTCCNTTTTTTTGGAAAAAANTNGCAAGGAAAGNNGCNCCTCCATATTCT  
45 TCNAANAANAATGGTGGACGGACANCCCNCAATTGGTTTATTGNTTCGCTTGGGGGAANNCCCTNTTTT  
TTTTGAAAAAGNANNNTTTTGATTAANTCCNCCCCCNGGGGGNCCNTTTTTTNTTCCCCGACNNA  
GAAAAAANCNACCCCTTGTGTGGGGGGNNTTCCNAANNAGCGGNCCTNAAAAGAGANGNTTTGNA  
TNCTTGCTTTNGGAACNCN

50 TTNAGCCTATANNAGNCGNATTACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGNAGG  
AAAAAAATTGTAGGAAGTCAGCACCTNTNTTAAGAAAATTGGCTACANCCNGNCACANTATGCATT  
TGTGGCNAATTCTGGGCTGNANGGGGNNCAACNTNCTAAACCNAATGNCTATNANNCCNNGGTTNAG  
GGANNGNAAGGCANCCGNNAGGGNCGGNATNGCCNNGGAACCNCCCTNGNTNNAACCTTTNGATTGG  
55 ATTNTNGCANCNACTTGCCCNANTGNNAANCCTTGNNTTGGCTTTTCCNGNNGNCTATTAATATGG  
GGGGATTGGTACTGGCCCTGTGTGGTCATGTGTGAGACATGGTGTCTCAAANACTGTGNATGGTGGT

CANCTNTTGCTCTCACNGCNATGTGNACACACTGAGNATGANACCTTGTGTAAAAATGCNCCNCTGTAA  
 NCATTTTGTGAAAACTNTNCNGNGGACACATGTGNGCTTTTTATNTGNAAAAAACAGTTTTGTNTA  
 AAAATATCCCCCTTGGNANATNTGNGGTGTTGGANCANCAAAATGANNCCCCCCTNGGANACNTN  
 NCTNNGTTTNCANNCTCNCGANGNTTTTTNTTGNAACTNNACGGGCNNNANCAGAGCTGGTATNTTG  
 5 CCCCNGGTGNCTGNGANTNGTTGNCAACCACANCTCANTAGCTTNCANANTNNGNCTGNAGCCCNAGA  
 NAAGAAAAAATAGATNNTTCCNTTTTTTGGAAAAAAAANTNGCAAGGAAAGNNGCNCTCCATATTCT  
 TCNAAAAANAATGGTGGACGGACANCCCNCAATTGGTTTATTGNTTCGCTTGGGGGAANNCCCTNTTTT  
 TTTTGAAGAAAGNANNTTTTGTATTAANTCCNCCCCCGGGGGNCCNCTTTTTTTNTTCCCCGACNNA  
 GAAAAAAAANCNACCCCTTGTGGGGGGNNTTCCNAANNAGCGGNCCTNAAAAGAGANGNTTTGNA  
 10 TNCTTGCTTTNGGAACNCN

NAAAAGCTGGACTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTC  
 GGCACGAGGCCGGGTTTCGGATCGCGAGTCCGCGCCGAGCGGGCACCGCGGTCCGGAGCTATGGCGG  
 15 TCGTTCGTCAGTAGTTTATTGTGGCGCTTGAAGCTACAAGCCCAAGTATCTTCAGCTCAANAAGAAG  
 TTAGAAGATGAGTTCCCTAGCCGCTCTGGACATCTGCGGCGAGGGGACTCCCCAGGTACACCGCTTCTT  
 TGAAGTGTTCGTAGCGGNAAGCTGGTTCACTCCAAGAAGGGAGGCGATGGCTACGTGGACACGGAG  
 AGCAAGTTTCTGAAGCTGGTGGCCGCCATCAAAGCCGNTTGGCTCAGGCCTGATGTGGCCTAAAGGC  
 AGAGACCAGTAATCGTGGCCCAGCCCTCTCGGCAGACGCTTCATGACAGGAAGGACTGAAATGTCTC  
 20 TTGGACGCTGGTCCCTCCCTGATGTTCTCGCGGCCCGCGGTTGGAGCANANATGGACACCCCTGGTCT  
 TTGCCTGTGCGTGCCTGTGTGTCNTGTGTGTCCTCCCGACGCTGGTCCCTGGTGCCTTCCCCATCCNTCATN  
 AACATGNTNTNACCAGCCTTCCCCATGTTATNCAATTTATCTTNNNGCNCCTNGGGNNGNCCTANNNTA  
 GCTTCTTTTNNGGGGGAGCCNANANGNTAAANCANGGTTNANTTTCAAATTTCANNGNGATGGAACA  
 ACTCANAANGCAATAAATGGNGATGAGGTTNCCCTGNTNNAANNNTNTGNNTTNTNTNGGGGGNCCCN  
 25 TTCCCCAANTGGCCAAAANTTGGGGNNGGNTTAAANNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
 NNN

TTNTTGAACNANNTGNNTGGGANCTCCNACCGGCGGGGGNGCGGCCGCTCTAGAACTAGTGGATCC  
 CCCGGGCTGCAGGAAAAAANNTTTTGGGGGGGGGNCNNNGGNNCCCAANNNTCCNCCG  
 GGGNGCGGNTTNAATAAANACNTGNNCTAANCCAAATCCNNNTATTTNNANTNNTTNNNNNTAANA  
 GGGGATTANTCCNNGNAGNANTCTCCTNTTNCATTNATANACNANTCCNNTCNNTANTATTNTAAT  
 30 NTNAAAACTTANAATAANATTGNNAGNATTGNNNTTATTANCTTNCATNANCNANNATTTTCNA  
 NNCANTAANANTNTATCTTANTTTNTNANCTTATNANCTNTATTCTNAANATNANNANNAGGANNA  
 TAGGNNCAAAGNNTCTCNCNNTANNTAGNGCGANNCCCTNNCNCANNCCNAAGGATNGNCNTTTNN  
 NCNGANNTANNGTNGNCCNNGCNNTGGNGCAATTAANCCAAANTNACAANCTCATGGTNGGNGGGTG  
 35 TTNCCNACGGNTGACTAACCTGGNGCCANTTTCTCTANTGTCNCCAGCNGGNACTNNGTGGNANGT  
 NTCCNNTGNNGTNTTGNANCAACNACCCGNTTACCNTGACTTNAATGGNTGGAATTTNCGGAAAC  
 TGNACTNAAAGNGANGGCCACCCCGTNGANNANCNTNNATCCCCNTCAANNCCCCAAAANCTCAA  
 40 NNCAATNCCTTNCANANCCCAANGCCTCNAACCTANCCNNNCANTGNNTACTAAAANTTAATAACA  
 ANNTTCTTNNATNANACCTTANTAATCCNNCANANGTTTNNNGCCTNNAANGNTTATCCGCGNN  
 NCCNTTNGNATTTTNTATTGNTNTCTNCCNACATNTTNCAANTAATCNAATCNCNNTTANCNCNCTN  
 CTGANNNACCAATNTNCAANNNTTGTTCNCAATTNNAACCTNCAATTNNCNCNNAATCACNGATCNC  
 NACNGCAATTTCNAAACCNTTANAANTNGNGANTGGGNCNCNCCCCNTCNCNCTTTCTCACTCNT  
 45 NTCTANATAATNAANNATNNACCATCTACCAACTTNCNCTNCCNCCCANCCAAAGGNGNGCCCTC  
 TTTANTTNTNTTNNNANCNTANTNTCANCATANNTACTNATATNNAATTCC

TTTGANNNCNNTTGGAGNTNNCTACAGGGGCNGNCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
 50 GGGNGAAAANNACCNTTAANNCTAAGCNAACATGGGNAANGTNTTACCCACATGAACNTCNTTGN  
 ATTGNGCNGTAAATTNATGGANGTCTACNACNACNGANCATATGNTCTANAAACNANGCTGGATCT  
 ATAAGAANCNAGCTGGGTCTATGANAAGTGGNCTTAACATGTATGACCACTTTTTTAANCAGCCANAT  
 CACAATGAAAACATCACTACTGTAATGCTTGGCCCATGATGTTATTTCTCACTATCAGTTGAGACCCA  
 GCAATAAATATAAAACGTTGCAAAAAAATCTGNGGGGGGGGGCCGNGNTNCCANTTTN  
 55 CNNTTANGGGNNGTNTTTNNNGNNTGGGCTTNNCTCAANTTNTGCTGCTTNTTNTGATGAAATT  
 TTGAANTCCNNTTNTTNTCTNCTCGAACNNGCAATANCTGTTNATNTTCCNNTTNTGNGCTTCTCTN

TTCTCAGTTTTNTAAACATTNNTANTNTTNNNGAGCTTTTANCNCNNATGNNTTTTNCNCNGGNTNACN  
 CTNNCNNTTTCCTNATATNTTATNCANTNTCNCCTTTTTTCTNGAACTTTTCCCNNGNCTTTTTCTT  
 NAANNANNATTNNCTNTNTTCTNCTTTTTNTATTTNATNTNTTNTTTTNTCTAATTTTCTTNTCNTA  
 GANTTNNGCNTTANAACNATTCTTNNAACCTTNTTNTCAATTTTACNNNNNTTANTTNNNTCTGG  
 5 ATTTTTTAATTTNCCTCTCNCNTTNNGACTNGNNTANNTTTTCANACTTGNANANTNTCNTCTNTTTNN  
 ATACNTNTTNCGTTTACCCACTANNGTTCATTCCNTGTTTNTCNATTCTNTNTTANNTANTCNCTATG  
 NTNTNTNNGANNTNTCNTNANNATTNGNANNTNTTTATTNATNTTTTCCCGNNTTTTATNTATTCTT  
 TNGTGNNNNCNN  
 10  
 AAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTTCG  
 GCACGAGGAAGGTGCAACTTTCTTCGGTCGTCCCGAATCCGGGTTCATCCGACACCAGCCGCCTCCAC  
 CATGCCGCCTAAGTTCGACCCCAACGAGATAAAATGTACCTGAGGTGCACCGGTGGGGAAGTCGGTGC  
 CACGTCTGCCCTGGCCCCCAAGATCGGCCCTCTGGGTCTGTCTCCAAAAAAGGTTCGGTGATGACATCG  
 15 CCAAGGCAACTGGTGATTGGAAGGGTCTGAGGATTACAGTGAAACTGACCATTGAGAACAGACAAGC  
 CCAGATTGAGGTGGTACCTTCTGCTTCTGCCCTGATCATCAAAGCCCTCAAGGAACCACCAAGGGACA  
 GAAAGAAGCAGAAAAACATTAAAGCACAGTGGAACATTACTTTTGATGAGATCGTCAACATTGCCCG  
 GCAGATGCGGCATCGGTCTCTAGCTAGAGAACTTTCTGGAACCATTAAAGAGATCCTGGGGACCGCCC  
 AGTCTGTGGGCTGCAATGTTGATGGCCGCCACCTCATGACATCATTGATGATATCAACAGTGGGCGC  
 20 AGTGGAGTGCCCCGCTAGTTAAGAACTGCAAAGGAAAAATAAGGACCATTTGACAACCAAAAAA  
 AAAAAAACTNGGGGGGGGGCCGGGNNCCCAATCCCCCTATAGGGGGGNNNNNNNNNAAANNNNN  
 NNN  
 NNN  
 NNN  
 25 NNN  
 NNN  
 AAANCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGANTTCGG  
 CNCGAGGCAGAGGTCTTTAGAAGAAGGAGAGGGGCCAATAGCTGTCTCATGACTCCAACCTCGAGAA  
 30 CTGGCTTTACAGATTACTAAAGAATGTAAGAAGTTTTCAAAGACCTTGGGCCCTATAGTGAGTCGATT  
 ACAGNNGGANCGGANTCNNGANCNNATNGCTGNCTGAAAAAGGNGCTGAANTTATTGNTNGNCC  
 NCCTGGNCNAANGATTGNCNTGTNNNCANNTANTANNGGNCNGNNTACNANNTTTNNAANAGNGACN  
 NNTGNTGTTTTANANGAANCNNACNNAANGTNGACTGGGNTTNGANCCCANGNNNTGCNCNTTGGGG  
 ATAANGNCCNCCCTNNCNCNACNNAACNNNTNTGNTTTNNNCTNCTTTCCCANANNTATGGNACCTTNG  
 35 NTNNGANAANNCNNNNNNNCCCNTNNNNNNNCNNGTNGNNGCNAANNNNNNNNNNTCNNNNGNGN  
 NNCNCNNNNNANNGNNNNNGANNAANAANAANAANTTNTNGNNCNNTTNNNTTNNNNNNNNNTTNCN  
 ANAANNNGNNTTGNNTTNTNNNNNGGNNNNNNNNNNACNTGCNNNNNGGNNNNCNNNNNN  
 ANNNNNNNNNANNNNTTNAACNNTNNNNNNNNNTTNNNNNGGNNNGNNTNNNNNNNNNNNCCNNN  
 NNNNNNNNNNNNNNNNNNNNTNANNANNGGNNCCNNNNNNNNNNNTTNNNGNCCNCNNNNNNNN  
 40 NNNNNCCNNNNCCNNNTNNNCCNNNC  
 CNN  
 NNNNNNTTTNNCCN  
 45  
 NCCNTATCTGGAGCTCCACCGCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
 TCGGCACGAGGGTCAGNNAACATCACCGAGCTGAATCTGCCGCAGCTAGAANTGCTCAAGAACCAAC  
 TGGACCAGGANGTGGAGTTCTTGTCACGTCCATTGCCAGCTCAAGGTGGTTCAGACCAAGTATGTG  
 GAAGCCNAGGACTGNCTGAACGTGCTGAAGAAAAACANGCAGGGGAAAGAATTACTTGNCCCACTGA  
 CGAGNTTATGTATGTCCCCGGGAAGCTACNTAGTGTGAACATGTGCTTATTGATGTGGGAACGTGNN  
 50 TACTACGTAGANAAGACNGCTGAGGATGCCNAGGACTTCTTCAANAGGAANATAGACTTCCTTANCA  
 ANCNAATGGAAAAAATCCAACCAGCTCTNCAGGANAAGCACNCCATGAAACANGCTGNCATGGNGAT  
 NATGAGCCCNAAANATTCANCAGCTCAACCCCTGGGAGCAGCTCAGGCTANCGCCAAGGCCTGAGAG  
 CTTGTTTTCAAAATGGGGCAGAGGGTGCCTGCTTCTGGGGCCTGGGACTTTGTGGACANTGGTTTCCTG  
 GAATGGGGAAANAAAAAAGGTCTGTGGTTTAATGCTAATAAAATGAGCCNCTGGGCACANTANTCN  
 55 NAGGTCNAAATTNTCCNCNTNGGGGGGGGGGNCNGGGCCCCCAATTNCCCCTTNTTNGNGNGGNNCC  
 CNNTAANNNNNGANANGGNCNNTCNTTTTTTTNNANTGNTNNNNNTTNNNNNNNGGNNNTATNNGNC

TTNTTNTNNAACCCCTTNNAACTTNTGNNTTCTTTCNNNGTTACTNNTTNNGNNGGNNTTTTNTTNGT  
NTTCCCCCENNNTTNTNNNNNGNNTNNGNNTTTNNNNNNNTATCCNNNNNANNNTTTTTNTNT  
TTTTNTTNC

5 GNAANACACNTATTNNTATTTTTTTTTTNNNNNTNTTNTCNCTCCCNENNNNCANTNNTTCGTNANCNC  
NTNTTCNNNGGGANANNAGNAGATNANAACCTTGAGCNCNCTGGANTGCANACAGCGGNGGCCGCTC  
TANACTAGTGGATCCCCCGGCTTGCAGGNANTGNAAATTGTAACGANTNNNNACCNATANAANNAAN  
ATTGGCTNCGGGGGCCCNACNCANTATNTATNTTGTGCCANNTCTNTGGGTTCGTAATGNTGACTTTCA  
10 TGCTANTAANCTTNGTNGCTANTNTGAGCATGGCANAANGGGGATNGNTAAGTCACCCNTAANGNAC  
NNGNNATTNCNNTTTGCAAATANTCTTGCTNGANANCTTTGGATTGCATNTNTGNTAANCAAANNTCN  
NTTCATNTTGANANACCGTTTGCCNNTNGNCTTCTCCTNNGCATGGTCTACTATAANATNTNTGGGCA  
NTTAGGNNACCGTTCGCCTTGCTNGNATCCNNCATTGNACACTTGNTNGTTNTCANAATCCTTGNGN  
AAATGGNTGGANCNNCCTATANGCTNCNAACTNAAATTGANANNATNCTGNNANNAGAAAGNN  
15 NTNGTNANANANNTNCACTCNTTNNANGACANNNTNNNCNTATCGAAANNCTCTNTTTNTCNTGGNTT  
ANCAATTCGCGNNTAGCNTNNTAANTNNNTTANAAANNNGNGTNACTANTCAGAAATNNNNANTTTNN  
NGNNTTNCAGNCNAAATCGNNGCNNTTTGNGTTACCCCTTNNACTATNATNATTGTATTTCAACNACANN  
TNGTANANNACNTNCTTGGCTTCTTTCACATGCTTTCTNAGNTGNNANTCATTTTTTTGANACTNATC  
NNCAATGNANTANATTANANTTCNCTGNNTATTTTATNAACTNGATGNGTNGGCCATTGNNTAACN  
20 CTAGTNACCTANANACTTGGTATNATGACAATATTAATNANCNCNCTCNCTCTTGNCNCNGNNTTGNA  
TTAAACAANTATGTNTCTNANNNCNTACTCGGATAATNCNTACTNGTGGNTAAACANAATTGGNGCC  
TTTAAATTTNTATANTTNNAATAACTCCNANGTNNGNCNCANNCTTNTTANANTATGNNGNTAGANNT  
ANTNGGNTNANTTNCNTGCNATNTANGNTCTCNCTTNNCTNTNGTNTNTAATCNACNACATNCNTTNT  
CTATNTNTTATNNAANNGCCCTANCTNTCTCNTNGTNNCCACNANTAACTNACANNATGNANCTTGTN  
25 TCTATNTNCTGANCTCACTATCGANNANNTTATACCTNTNTCTTTCNCTCTACNATATTACTANCTANN  
TCNCNNNCNNGNTCGNANANAACAATCGNGGTCACNTNTTCGNNAANNTCTGCTGGGGACATATNNG  
TCG

30 GNAANACACNTATTNNTATTTTTTTTTTNNNNNTNTTNTCNCTCCCNENNNNCANTNNTTCGTNANCNC  
NTNTTCNNNGGGANANNAGNAGATNANAACCTTGAGCNCNCTGGANTGCANACAGCGGNGGCCGCTC  
TANACTAGTGGATCCCCCGGCTTGCAGGNANTGNAAATTGTAACGANTNNNNACCNATANAANNAAN  
ATTGGCTNCGGGGGCCCNACNCANTATNTATNTTGTGCCANNTCTNTGGGTTCGTAATGNTGACTTTCA  
TGCTANTAANCTTNGTNGCTANTNTGAGCATGGCANAANGGGGATNGNTAAGTCACCCNTAANGNAC  
35 NNGNNATTNCNNTTTGCAAATANTCTTGCTNGANANCTTTGGATTGCATNTNTGNTAANCAAANNTCN  
NTTCATNTTGANANACCGTTTGCCNNTNGNCTTCTCCTNNGCATGGTCTACTATAANATNTNTGGGCA  
NTTAGGNNACCGTTCGCCTTGCTNGNATCCNNCATTGNACACTTGNTNGTTNTCANAATCCTTGNGN  
AAATGGNTGGANCNNCCTATANGCTNCNAACTNAAATTGANANNATNCTGNNANNAGAAAGNN  
NTNGTNANANANNTNCACTCNTTNNANGACANNNTNNNCNTATCGAAANNCTCTNTTTNTCNTGGNTT  
40 ANCAATTCGCGNNTAGCNTNNTAANTNNNTTANAAANNNGNGTNACTANTCAGAAATNNNNANTTTNN  
NGNNTTNCAGNCNAAATCGNNGCNNTTTGNGTTACCCCTTNNACTATNATNATTGTATTTCAACNACANN  
TNGTANANNACNTNCTTGGCTTCTTTCACATGCTTTCTNAGNTGNNANTCATTTTTTTGANACTNATC  
NNCAATGNANTANATTANANTTCNCTGNNTATTTTATNAACTNGATGNGTNGGCCATTGNNTAACN  
CTAGTNACCTANANACTTGGTATNATGACAATATTAATNANCNCNCTCNCTCTTGNCNCNGNNTTGNA  
45 TTAACAANTATGTNTCTNANNNCNTACTCGGATAATNCNTACTNGTGGNTAAACANAATTGGNGCC  
TTTAAATTTNTATANTTNNAATAACTCCNANGTNNGNCNCANNCTTNTTANANTATGNNGNTAGANNT  
ANTNGGNTNANTTNCNTGCNATNTANGNTCTCNCTTNNCTNTNGTNTNTAATCNACNACATNCNTTNT  
CTATNTNTTATNNAANNGCCCTANCTNTCTCNTNGTNNCCACNANTAACTNACANNATGNANCTTGTN  
TCTATNTNCTGANCTCACTATCGANNANNTTATACCTNTNTCTTTCNCTCTACNATATTACTANCTANN  
50 TCNCNNNCNNGNTCGNANANAACAATCGNGGTCACNTNTTCGNNAANNTCTGCTGGGGACATATNNG  
TCG

TTNAACAACAATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
55 GGAATTCGGCACGAGGGCGGTGACGGCCGAGGCGACAGAACCGAGGGGCTGTCGTTGGTGGGCGCTC  
CAGGGCTCTGAACGAGAGAAGCGTGACCCGGAACGGAAGCGAGTCCCCATCCCACTCCGCCAGGT

TTCACGCTAGCCCCAGGCTTACTGGTAGGCTCCTGCTGCCATGGACCTGTTGTTTGGGCGGCGCAAGAC  
GCCAGAGGAGCTGCTGCGGCAGAACACGCGGCCCTGAACCGGGCCATGCGAGAGCTGGACCGTGAG  
CGACAGAAGCTCGAGACCCAGGAGAAGAAAATCATCGCGGACATCAAGAAAATGGCCANGCAGGGC  
CAGATGGACGCGGTCCGGATCATGGCGAAAAGACCTGGTGCGCACCAAGCGGTACGTCCGAAAAGTTTG  
5 TGTGTGATGCGGGCCAACATCCAGGCTGNGTNCCTTAAGATCCAGACACTCAAGTCTAACTCAATG  
GCACAAGCCATGAAGGGCGTTANCAAAGCCATGGGCACCATGAACAGACAGCTTGAAGTTGCCCCAN  
ATNCAAAANATCATGATGGAGTTTTGAACCGGCAGGCAAAAATTATTGGACCTTGAAGGANGGAAAT  
GATTAACGAACNCCCTTTNNTGACNCCATTGGGGGAACCAAGGACCAATTAAGAAAGGAAAAGNGATT  
GCTTTTTTTAAACCCCGAGNNCTTGGGACCAAATTGGGGGTTGANNCCCTTGAAAAAANTAACTTGGT  
10 CNAACCTTTNCNTTTTCCCCGGGNGGGTTTCCNTTAAACGTTGGGNTTGCCCGGGGGAAAAA  
NCCNAAGGNTTTCNGNCCTTTTGNCCCTTGGGGGGGACNCCAAACCCNTNAACCTTTGGAGGGAAAAG  
GGTTTAAAAAACTTTTAAAAGGGAATTGAAATTGGCCCNNGCTTTTNCCAAAGG

15 NAAAACTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTGC  
GCACGAGGNTTCNACCTGANNCCCTGCCAACNNCTNCTACCNTNCCAGGCTCTNCACNACNNCTACC  
NCGNCTGCATTAACGNNAAANGGACCTNTNCGGCCCTGGACNNGGTCNTGNCCNCNTGNACGTACG  
NNGGNNNNNNGGGGGACAGNTNNNTNCATTCCATNNNNACNCTNCACNCTTCACCGNCATGCTTGAC  
ATGGNTCAACACTNACNTGTGNANGTTCTCNCNCATCGAGANCTTNTGNNACTGAGNTACTCTNCTGC  
20 TGTGTTGCNTTNGCCCCGTTGACCCAGAGNNNACNNNCNACTGGCNGAAACCTGCCCCTCTGC  
CTGCNTCNTGCGCNNGGGACGNGGGTNTNAAAAGACATGCTCGAGCCNGGATGGGGACCTGGCNTGG  
CCNACGTTCACTGTCNNCNGGCTGNCCTCTATGNTNGGGAACGGAACCCCAAGNGGGCGGCGGGACT  
GACTCTTTCCCCTGGCTGGGNGATGCANACCATGANTGCCTNTNCATCTATNTCTGATGCNTCANTACA  
ACATGCGTGCTGGTACCCGATTTTGGGCCCCGGTTGGTCCGGACGATATGCCTTTTAACTTACATCCC  
25 GCACTGGGACTTTCCGAAGCTCTTANANAANTNANNNNTTNGGGNNNGNNANTTNTCAATCCNNANC  
CCNNNCCNNANNGNTTTTTTTGNAAGGNNAANCCCGGGGANNCCNNCCGGGNGGAANGGNAANN  
NGGNAACCTTCCAANAAAACCAANGGTTNNCCCTTNCNNNAGGGNNNANGNNNNNCCNNNNNNNN  
NNNNGGNNNNNCCNNNNNNNNNNNNNNNAGGAGTTTGAACCCCTTTTNTTTCAAGNNTTT

30 TTTGGAAANCAACAATTTCTGGNANGCTTCCACGCGGCGGGTGNGCCGGGCNCGCTTCTTAGAAACT  
AGGTGGGAATCCCCCCCCGGGGCTTGCAAGNAAAAANAANAAAAAATNTNTNNGGGGGGGGG  
GGNCCCCGGGANCCCCNAANTTTCCNCCNTTATAAGGGGANGTNCNNTNTTNAANAANNNNNNNNN  
NN  
35 NNN  
NN  
NTNNNNNNNNNNNTNNNNNNNNNNNTNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
NNTNNNNNNNNNNNNNNNNNNNNNNNNNTNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
NN  
40 NNN  
NNNTNNNNNNNTNNNNNNNTNNNNNNNNNTNNNNNNNNNTNNNNNNNNNTNNNNNNNNNT  
NNNT  
NNNNNNNTNTNNNNNNNNNNNNNNNNNNNNNTNNNNNNNNNNNNNNNNNNNNNNNNNNNNCTN  
NNNNNNNNNNNTNNNNNTNN  
45 NNNTNNNNNTNTNNNNNTNNNNNNNNNNNNNNNNNNNNNTNNNNNNNNNNNNNNNNNNNNNN  
NNNNNNNNNNNTNNNNNNNNNTNNNTNNNNNNNTNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
NNNNNNNTNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNTNNNNNNNNNNNNNTNNNNNNNNNNC  
NNNTNNNNNNNNNNNTNTNNNNNTNNNNNTNTNNNNNNNNNNNTNNNNNNNNNNNNNNNNNTN  
NNNNNNNTNTNNNNNNNNNNNTNNNNNNNNNNNNNTCNNNNNNNNNNNTTNTNNNTTNNNNNN  
50 NCNNNNNNNNNNNNNNNNNNNCNNNNNNNNNTNNNNNNNNNNNNNNNNNNNTNTNNNNNNNNNN  
NNNNNNNNNNNNNNNNNNNNNNNNCC

AGNCNATCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGTGA  
55 AAACCAACGTTAAACCTAAGCCAAAATGGGAAAGGAGAAGACCCACATCAACATCGTTGTCTATTGGG  
CACGTAGATTACAGGAAGTCTACCACGACTGGCCATCTGATCTACAAATGTGGCGGGATCGACAAGAG





TCANCCCCCTATGAGCTGNGGACAANTACACCTNTNGNCAANGCACCTCATTTGCTTACANAAGAATTC  
 TTGAATTACNGAGGGGAGGGGAAAATTTCTCTTANTAAAACCCCNNGGTGTGGGGAGNNGTTTTGNGG  
 GACANTNTNCCACNNAACACAAGGGAATNNCCNNGNTTGACAATNNGGGNGGCTTTTTTATTNTTGCT  
 GGAACATNTNTTNCCTGAAGGGGGCAANAAAAAANTGCCTTTTTTNTTGGNNCAAAAAATNTTTNT  
 5 TTCNAAGAAANNAATTCCCCANCTTGNTTTNTNAANCCTGGNTGNAAANTTTTTTTCATAAANAANA  
 CNGGGNANTGNTTNTGNNGNCCCCAACTNNTTTTN

AACAAAACCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGCCTGNAGGAA  
 10 ATTCGGCACGAGGCTTTTATTGAGACCACCCAAGGACCCAGGGGACCCACACCTGGGGTNACGGTAT  
 CCGGGGNTNTAANCCCNAAANNGGGGGNTNGTTTTCCNANCCCNNGTTGNCCCNCCNANGGNNNAG  
 NCCCTTTTTTGNCCNNGCNNGGAANGNAGNANTNANNNNTAAAANCCAACNTCTTTNAACNNTCNA  
 NCCCAANNCTTCCCAANCCNAAANCTNNAGGGNANTTGAAAAGAAATGAAAATGGGNTNGCACAATG  
 TGNACNGAANTAGAAACCTTTTTATAAAGAGATATTATAATATNGGGGGCCCCATNTTCGNNGNCAG  
 15 GTTACANTTTTGTGGNCAGGATAAAAGTTGNGTGTGNCTANACCTGTGCCTGTGNACANCTCTTNNNGT  
 GANNNCACAAGATCNGAGCNCAGNNTNAAANNGCGCTCTNTTTTGTACGAGAGNNAAGNCCNAN  
 GNGTGNCCACACAACACATANGNGTGNATGTGNACACACCACCAAGTGANANATGACACTNTGAT  
 AATATTTATAAAAAATATATTGTGTNTGTGTGNNAAAAAAAAAAAAAAAAAAACTTNGGGGGGGGGGC  
 CGGGNCCCCAANNNTCCCTTTTAGNGNGGGNNNNNANAANNNNNNNNNNNNNNNNNNNNNNNNNNN  
 20 NNN  
 NNN  
 NNN  
 NNN

AACAAAACCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGCCTGNAGGAA  
 25 ATTCGGCACGAGGCTTTTATTGAGACCACCCAAGGACCCAGGGGACCCACACCTGGGGTNACGGTAT  
 CCGGGGNTNTAANCCCNAAANNGGGGGNTNGTTTTCCNANCCCNNGTTGNCCCNCCNANGGNNNAG  
 NCCCTTTTTTGNCCNNGCNNGGAANGNAGNANTNANNNNTAAAANCCAACNTCTTTNAACNNTCNA  
 30 NCCCAANNCTTCCCAANCCNAAANCTNNAGGGNANTTGAAAAGAAATGAAAATGGGNTNGCACAATG  
 TGNACNGAANTAGAAACCTTTTTATAAAGAGATATTATAATATNGGGGGCCCCATNTTCGNNGNCAG  
 GTTACANTTTTGTGGNCAGGATAAAAGTTGNGTGTGNCTANACCTGTGCCTGTGNACANCTCTTNNNGT  
 GANNNCACAAGATCNGAGCNCAGNNTNAAANNGCGCTCTNTTTTGTACGAGAGNNAAGNCCNAN  
 GNGTGNCCACACAACACATANGNGTGNATGTGNACACACCACCAAGTGANANATGACACTNTGAT  
 35 AATATTTATAAAAAATATATTGTGTNTGTGTGNNAAAAAAAAAAAAAAAAAAACTTNGGGGGGGGGGC  
 CGGGNCCCCAANNNTCCCTTTTAGNGNGGGNNNNNANAANNNNNNNNNNNNNNNNNNNNNNNNNNN  
 NNN  
 NNN  
 NNN  
 40 NNN

TTNANCNCTATCTGGAGCTCCANCNCTGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 45 GCTCGTGTGAGTGACATCGTCTTTAAACCCTGCGTGGCAATCCCTGACGCACCGCCGTGATGCCAGG  
 GAAGACAGGGCGACCTGGAAGTCCAACCTACTTCTTAAGATCATCCAACCTTCTGGATGATTATCCAAA  
 ATGCTTCATTGTGGGAGCAGACAACGTGGGCTCCAAGCAGATGCAGCAGATCCGCATGTCCCTCCGCG  
 GGAAGGCTGTGGTGCTGATGGGCAAGAACGATGATGCGCAAGGCCATCCGAGGGCNTCTGGAAAA  
 CAACCCGGCTCTGGAGAACTGTTGCCTCATATCCGGGGGAATGTGGGCTTCGTGTTACCAAGGAGG  
 50 ACCTCACTGANATCAGGGACATGCTGCTGGCCAACAAGGTGCCAGCTGCCGCCGTGCTGTTGCCATA  
 NCGCCGTGTGAAGTCACTGTGCCAGCACANAACACTGGTCTGGGGCCCCGAAAAAACCTCTTNTTCCA  
 GGCTTTAGGCATCACCACNAAAATNTCCAGGGGCNCAATTGAAATCCTTGAGNGATGGGCACCTGATT  
 AAAACAGGANACAAAGTTGGGCNCCANCAACACCCCNCTGTTGAANATGCTGAACATNTTCCCCCTT  
 TTTCTNTTGGGCTGGNCATTCCACAGGGGGTTTGAAAAATGGGNGCATTTTACAANCCTTGAAGNGG  
 55 NTTGACATTACAAAAAGGAAAACTTTGNANTTTCCCCCTTCTTGGGAGGGGGGNCACCCCAATTTTTT  
 NCCCANCGGGTGNCCTTGCCAAANTGGGTTANCCCCAACCCGNGCATTTTGGTNCCCCCNNTTTTTTTT





TGTGTTAATTTTATATCAGGGTATTGGCTGCCAGGGGGTCATCCCTAAGTGGCCTGAAGATGGACAAA  
GGGAAGTAACAGGCACGTGATGTTGGCAAGGATGCTTCTAGGGCTAGAGGATCAGTGGTGGGAGAGA  
GCTGCAGAATCCACCAGCCAGAACTGCAGATAACGAATCTTATGGTCAGGGGCTGTGACTGAGAGAA  
5 GGAAACTGAGGTTGTGTTCTGAAAGTACATAAACTCTCACATATACCCAGTTCTTCACCATCTCCCCTC  
CTCACTTTGCACTGCCATTTCTTTTGCATTAGGCAATTTGCTCAGACTTTCCAGAGCCATGGCCCATCC  
GTTCTCTGGAATCCCCCACACCTCTGAGAGGTGGATCACCACGTCCTGCAGGGCTGCTCCCCTCCAAAC  
TACCTTTAGGAGATGCAGGACAGGGAGGCTGTTTCAACCAGAAAGACCAAAATCAAGAACCAGGAG  
CAAAACGTGGTAAAAACAGAAAAANGGCAGGTGGCAAATGGGTTTCTTTTGGGGTTTCTGGTTTCTTTT  
10 TTCACATCNGGGGATGGCTGNACCAANAAATCTTTCAGTCCGCTTACATGGTNCTTCTTNTNTNCCC  
TNCCCACCTTTTTTTTTCTATTAATCAAAAAAAATTTCAAAAGCCAATNGGGATGGGCCGGATCTCACA  
GGCTGGAAAACTCGTTCCTCCCAACCATTTTATTGAAAAAGCTGGTTNTTATTAATNATTGCCAAA  
CCCTTTGGCCCCGGGNGGAAAAANATTTGACNAATNTTTTNAAA

15 NAAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGATTTCC  
GGCNCGAGGGAAGCACGTCGTCTTCATCGCCAGAGGAGAATTCTGCCTAAGCCAACTCGAAAAAGC  
CGTACGAAAAATAAGCAGAAACGTCCAGGAGCCGCACTCTGACCGCTGTGCACGACGCCATCCTGG  
AGGACTTGTTTTTCCCAAGTGAGATCGTGGGCAANAGGATCCGCGTGAAGCTGGACGGCAGCCGACTC  
ATAAAGGTCCATCTGGACAAAGCTCAGCANAAACACGTGGAGCACAAGGTTGAAACGTTTTCTGGTGT  
20 CTATAAGAAGCTCACGGGCAAGGATGTAAATTTGAATTTCCAGAGTTTCAGTTGTAAACAAACGACT  
AAATAAAATATTATTCTCAAAAAAATAAAAAAAAAAANTGGGGGGGGGCCNGNCCCNATTNCC  
CCTTATNGGGNGNNTNTAANANNN  
NN  
NN  
25 NNN  
NN  
NN  
NN  
NN  
NN  
NN  
NN  
30 NNN  
NN  
NN  
NN  
NN  
NN  
NN  
NN  
NN  
35 AAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTC  
GGCACGAGGGGCTTCCAGGGAATCCCTCTGTTGAGGACAACCTGGCTGTCTTCTCCTGCACCCTCCCCCA  
AACAAACCCTCAACTGCTAGACCCACCATGAAACCACTGGGTTCTGGGTCCCAGCTGCTGATTCTAGAA  
CCCCGCTCTGTGCTGCATCCTGGTCCCATCCCCTANATCTAGAACTCAGCCCACTGGATTCTANAACC  
TCCATATTTACCTCACCTCGAGGCTCTTCCATCCCCAAGCTGTGCCCTGTCCCCAGCTTTGGTGAAAGA  
NAGGGGCCCCCTTATGTGTGCTGTGTGTGTGCTGCTGCACTTGGTTTGCAGTTGGGAGCGGAAGGCAGA  
AGGGGTGTGATTGAAGTGTGTCCAGAGATGAAAAAATACATATATATTTAACAAAAAATAAAAAA  
40 AAAANNNNGGGGGGGGNGCCNGNCCCNANTTCCCNTATAGGGNGNNGGATNAAAAANNNNNNNNNNN  
NN  
NN  
NN  
NN  
NN  
NN  
NN  
45 NNN  
NN  
NN  
NN  
NN  
NN  
NN  
NN  
50 TTGAAAACANTGGACTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAA  
TTCGGCACGAGGCTTTTATTGAGACCACCAAGGACCCAGGGGACCCACACCTGGTGTACGGTATC  
CGTGGGTCTCAGCCCCAGAATGGTGGGTGCTTTTCCAGCCCCCTGCTGTCCCCACCAAGGGACAGGC  
CCCTCTCTGTGCCCTGCCTGGGATGGAGGACTCGATCATCAGATACGAGTCTCTTTGAACATCCAGCCC  
CAGTCCCTCCCCAGCCCAGAGCCTGAGGGTCATTTGAGAGGAAGTGAGAGTGGCATGCAGCAATGGAC  
AGGACTCAGAAGCCCTTTTATAAAGGATATTTAATATCGTGGCCCCAGCTTCGTGGCAGGTTTCACTTT  
55 TCTGGCCAGGTTAAAGTTTGGCTGGGCCTACGCTGCCCTGAGCAGCTCTCTGACTGTAACCACACGAG  
CTGAGTGCAGTGGATGAATGCGGCCTCGTTTCTGCCAGGAGTGCANAGTGCCAAGCGTGGTCCANACA



[illegible]

20

35

55

GCATCCAGAGCCTGAAGTGCCGCCGCTTGCGTGGTGGTGGGGAACGGGCATCGGCTGCGCAACAGCTCG  
CTGGGAGAGGCCATCAACAAGTACGACGTGGTTCATCAGGTAAACAGTGCCCTGTGGCTGGCTACAA  
GCAGGACGTGGGCTCCAAGACCACCATGCGTCTCTTCTACCTGAATCCGCCCACTTCAACCCCAAAG  
TGGAGGACAACCCTGACACACTCCTCGTCTGGTGGCTTTCAAGGCCATGGACTTCCACTGGATTGAG  
5 AGCATCCTGAGTGATAAGAAGCGAGTGCGAAAGGGCTTCTGGAAACAGCCTCCCCTCATCTGGGACGT  
CAACCCCAAACAGATTCCGATTCTCAACCCCTTCTACATGGAGATCGCAGCCGACAACTGCTGAGCC  
TGCCGATACACCAGCCACACAAGATTAAAGCAGAAGCCACCACAGGGCTGTTGGCCATCACCTTGCCC  
TTCACCTCTGTGACCTGGTACACATTGNTTGGCTTCGGCTACCCAGACCCCAACANAAAAAGCAGTCC  
ATTCACTACTATGAGTATATCACGCTCAAGTCCATGATGTGGTTCANGCCACAATGTCTNCCAAGGAG  
10 GCCCNTGGCCATTAAAGCGGGATGCTTGGAAAAATCGGAACCGGNCAAAAACCTTAACTTTACTTTT  
TGACTTNGGGCAANGGCTTGTTCCCATTTGGGNNNAACCTTGNTAAACNGGCCCCCGGCCCCNNCCTT  
TTGGGGGGGGGCCAGGGGCCACATTGGGGCCGGTTTTGGACCTCACCTTTTTCTTGGGGGGGGGNGGG  
GGNCCAGGNTTAAAAANAAAGGCCNCCCCCTTTGGTTTTTTTTTGNNGAAGNT

15 AAAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCTCCC  
GTGCTCCCTCTTTTGGCAAACTNGTNGAGTACATGACTCAGTCANACAGGAGNTCTACCTCACAGNCN  
ACNTGTNNNCTANTNGCNAGANAGACTTGNGTCACTAACGTGGNCCACNACCTGCCGGAAATGCA  
TTGTTCAANAACAGAGAANGAAATTTANGATTTTGTCTTTCTGTGACNGNATTNGNTTCCGTCTCANNT  
20 CNGAGGNGTNAACNGCATGTTNNTNTNGANANNGCNTATTTAACATTGATTGNGANAACNGGGAAT  
TNGGCTCAAAANCTNGGAGCNTGANAGGAACCTTATAATGANGCATAGNGTCATTATTATANCNGG  
ACCATNGANGGATNCTNTTTCATCCTCTCTCANNGNANAAATCANGACNNGGGTGCTTGTGGCANANG  
GNTTTCACACCTCGGTAGAANTAAGTGNATTGCANGTTTCACTCCCTCACCGAGGNGACCTGNTTCCC  
ATCTGTCTNAANGAGCANAAAGACTNGATTGNTTNCANTGGCTCTAATAAGNAANAATNCNNCATTAC  
25 NACANGGTANNGGGGNNTTCTNTTTTNNNCANTCTNNTCCNNGNCCATNCANCCACCCGANCCAATA  
TTTCTNCTTCCCTAGNNNAAAAANTCTNTACCTTCNCTGTNATNTATATNTNNGNNGNCNNNTTTTTN  
TCTTACCTNTNTANNTNCCNCCGCAAGGANCTNANAAGTTAANTNATTGNNTTNCATCNGCACTCGC  
NNCTNNTNTAACGNNTTGNNTNTTGGTCCCNANANCNANTNGCCCNATAATTNNCCNTTCTNANN  
30 TNTGNANCCANNTNNGCNNNCNTTCTNNTAGGATCGCCACCGATANNGNATATCCACCGNANTCTC  
CCTCNCTTNTATANNGTNAGNAACACNACNGNNTNNAAGCNGCTCNTCNCNACNGNTTNTNCTAC  
NANNNTAACATANNNGGAAGNNC

35 NNCNATATTGTGTNATTATTTTTNTNTTNNNTTNNNNNNANNCNNNNCCNTNTCTNANANNNTCATCN  
CAATNTTNTCTTATCTNNGGNANAATTTANNNAGACCNCNATTTGAGNNACNCNGGANTNCATNACAGT  
GGCGGCCGCTCTAGAACGAGTGGATTCCCCGGNCTGCAGGAAATGTNCCNCACGAGGGGCTNAANG  
TTNCCNAGGTANGTNGGCTNCNNTGGGNGNNTTANTGTNNCANNAAGGACTNCACNCANACANTTTN  
CATGATCAGTTCATTATNATTTCTTTNANNTTTTAAATCTNNNANTCCTCANCCACTCCCTCTTNATTAN  
40 NNTANATCTTNNNNNNNNNTNTTAATNTNNAACCTTTTTCTCTATANNTNTCTCTGTNANCTGNGNCNC  
NGTCTANNCNTTCTANTCGAGCTCTNTAATTGTNTACTTATTTCCNAACTNNGTTTCTCATTCCCNC  
NCCATANANNATNTCNTACATANNCGAGNCANATTTCCNCTTTANTGNNTACCTTTTCANANATA  
TATTGACNACGTCTTTTANNTTTTTNNNTNTCANTCATCANCNGATNNTNCANACTANTCTCCNTNAN  
ACCTANAACANTGTNTNAAANAACNCTATATTTACTCNTTATNTTATAATCNAGTGNTCNGNNNACTC  
45 GNATANTCANTATNGCNANANGANCTAGNNGCCACNNTTNGNNAANTATTTTNGANTCTCCATNTTN  
TAGTCNCNCACTANACTAACTTTNATNATTTCTNTTGCAACAGNTNNGCCCTTNNNTNNTAATNCTC  
TACNTTNTTATTTCCACCNANGACCCTCCNCTANTANTAACNNGATNANGCCNTTANTTNANNTACT  
CCATCACNTCGTCTACTACANGAGGCNACNNTTGTGTGANTNNNCTCNTCAANNNTTNNNTNACCT  
CTATTCTCNTNTANTACTTTCCCNNAATNTACTTNTCCGTATATNTNTNTTAAAGANCNNTNTAN  
50 NATGAAATANNATTATTNTATTANCTCTTCTNNTTANTTCTCTNCGCATNTTNTNNTTGGAGNGACC  
NCNTCATNTATNNCNTCTCNANAGNTNTTNTATNNTNCTATNNTNNNCANNNCCNTCTTACTAGTANACC  
AATNNTCAGNTCGGCNATNTTATGTGCCNCCNCCNNGTCCCCACTACCTNAAAACCTNNGGNGAN  
NCTNNGCTNNGNTTNTGNAAATANAACCCCCAATNTTTTATAAACNTGNNGNCNNNTCNCTTCTCN  
CNANCNNTTNTACATACNCCCCTCTATCTTANATCNAANTANGTATTCANNNACNTCGCGTATATAT  
55 AAACNTNNGNATNCTNTNCTCTATNATCTTATCNGTACNTCANACNNNACGTTNNTTNCNCCGATTTA

AGTNATTNNCNCGNNNNATCNNCCGCANCGTCTCTTATNTATCTNNCNACTCATCTANNGTTACGTGA  
CTNTCNATANNGTATCTAATTTTNNATTTNATTTTANG

top of the page

5 NNCNATATTGTGTNATTATTTTTNTNTTNNNTTNNNNNNANNCNNNNCCTNTCTNANANNNTCATCN  
CAATNTTNCCTTATCTNNGGNANAATTTANNNAGACCNCNATTTGAGNNACNCNGGANTNCATNACAGT  
GGCGGCCGCTCTAGAACGAGTGGATTCCCCGGNCTGCAGGAAATGTNCCNCACGAGGGGCTNAANG  
TTNCCNAGGTANGTNGGCTNCNNTGGGNGNNTTANTGTNNCANNAAGGACTNCACNCANACANTTTN  
10 CATGATCAGTTCATTATNATTTCTTTNANNTTTTAAATCTNNNANTCCTCANCCACTCCCTCTTNATTAN  
NNTANATCTTNNNNNNNNNNNTNTTAAATNTNACCTTTTTCTCTATANNNTNTCTCTGTNANCTGNGNCNC  
NGTCTANNCTTCTANTTCGAGCTCTNTAATTGTNTACTTATTTCCNAACTNNGTTTCTCATTCCCNC  
NCCATANANNATNNTCNNTACATANNCGAGNCANATTTCCCNCTTANTGNNTACCTTTTCANANATA  
TATTGACNACGTCTTTTANNTTTTNNNTNTCANTCATCANCNGATNNTNCANACTANTCTCCCNNTAN  
15 ACCTANAACANTGTNTNAAANAACNCTATATTTACTCNTTATNTTATAATCNAGTGNTCNGNNNACTC  
GNATANTCANTATNGCANNANANGANCTAGNNGCCACNNTTNNGNNANTATTTTNGANTCTCCATNTTN  
TAGTCNCNCACACTANACTAACTTTNATNATTTCTNTTGCAACAGNTNNGCCCTTNNNTNNTAATNCTC  
TACNTTNTTATTTCCACCNNANGACCTCCNCTANTANTAACNNGATNANGCCNTTANTTNANNTACT  
CCATCACNTCGTCTACTACANGAGGCNACNNCTNTGTTGANTNNNCTCNTCAANNNTTNNNNTNACCT  
CTATTCTCNTNNTANTACTTTCCCNNAATNTACTTNTCCGTATATNTNTNNTTAAAGANCNNCTNNTAN  
20 NATGAAATANNATTATTTNTATTANCTCTTCTNNTTANTTCTCTNCGCATNTTNTNNTCTGAGGNGACC  
NCNTCATNTATNNCNTCTCNANAGNTNTTNTATNNNCTATNNNNNCANNNCCNTCTTACTAGTANACC  
AATNNCTCAGNTCGGCNATNNTTATGTGCCCNCCNCCNNGTCCCCACTACCTNAAAACCTNNGGNGAN  
NCTNNGCTNNGNTTNTGNAAATANAACCCCCCAATNTTTATAAACNTGNNGNCNNNTCNCTTCCTCN  
25 CNANCNNNTTNTACATACNCCCTCTATCTTANATCNAANTANGTATTCANNNACNTCGCGTATATAT  
AAACNTNNGNATNCTNTNCTCTATNATCTTATCNGTACNTCANACNNNACGTTNNTTNCNCCGATTTA  
AGTNATTNNCNCGNNNNATCNNCCGCANCGTCTCTTATNTATCTNNCNACTCATCTANNGTTACGTGA  
CTNTCNATANNGTATCTAATTTTNNATTTNATTTTANG

30 TNNANAAANNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAAGTAGTGGATCCCCCGGGCTGCAG  
GAATTCGGGCACGAGGCCGACACAAGGGGGAGCGTGTTACCCCGGTAACGCAGGTCTGTGGTGC  
TGCCGGTGCTCCTGGCCCTCAAGGCCCTGTGGGTCCCGTTGGTAAACACGGAACCGTGGTGAACCGG  
GTCCTGCCGGTGCTGTTGGTCTGCTGGTGTGTTGGCCCAAGAGGTCCCAGTGGCCCAACAAGGTATTC  
35 GAGGTGACAAGGGAGAGCCTGGTGATAAGGGTCCCAGAGGTCTTCTGGCTTAAAGGGACACAATGG  
GTTGCAAGGTCTCCCGGGTCTTGCTGGTCATCATGGCGATCAAGGTGCTCCCGGTGCTGTGGGTCCCGC  
TGGTCCCAGGGGCCCTGCTGGTCTTCTGGCCCCGCTGGCAAAGACGGTCGCATTGGACAGCCTGGTG  
CAGTTGGACCTGCTGGCATTCTGGTCTCANGGTAGCCAAGGTCTGCTGGCCCTCTGGTCCCCCTG  
GCCCTNCTGGACCTNCTGGCCCAAGTGGTGGTGNTACAAATTTTGGTTTTTGATGGAACTTNTACAG  
GGCTGACCAANCTTGCTTACCAACTTTTTTTNAAACCCAAGGATTATGAAGTTGATGCTTACTCTGAAA  
40 TCTCTCAACAACCAAAATTGAAAACCTTNTTACTTCAAAAAGGCTTTAAGAAAAAACCAACTTGGA  
CAATGCCCCGAGACTTTGANACTCAANCCCNCCCAAAAATGGGAGCAAGGGGTACTAACTGGGAATT  
GGACCCCTTAACCAAGGGATGGNCCTNTTGGGTGCCTTNTTCAAAAGNATACCTGGGGAAATTTNT  
TTTANTTGGGGGAAAAAATTGGNTTTCNNGGGCTTCAAACCTTGAAAAAAATTTCCAAATNAAAAA  
AACTTGGGTACCAAAAAAAATTTCCAAGGGGCCA

45 AAAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAAGTAGTGGATCCCCCGGGCTGCAGGNGAGG  
GNAACCATGACATACAGTGATGCANGGAANAANACGAAGTGGANGGCANAATAGCTATAGGAAAGC  
NGCTGGACTTGCCTGGAGGAGCTGGACAGGTCTTTTGGTGAGCTGGTCTTGACGCCACACCTCTTGGT  
50 CCTGGAGAGAGAGAAAAANAANTGCTGNTAGCANAGCTGCTGAAACACCTCTTNCNTTCCCNANCTCT  
TTCACAAAGGCATTTGAACTCTTTGGCATTCTACACAATCTACACTTACGGATCCTCACTTGACACTCG  
CCTTCTCTGGCTCCCCTGTTTCAGGGCAGNANAAGCANANNGAGGCTTTTTGTGAAATGAAAGGCNG  
CATGTNGGAAAAAGAATGNCTGGGAAATAGGACAGGAACTCCTCTTNTAAAAAGATGGGTGTGGGG  
TGACAANTGCAGGCACACCTGGNTTCAANTTCTANCTTCAATATATGACTGGCTATGGGGACTTTGGN  
55 AANANNTTTAACCTTCTGGGCCTCATTTTTCCNTTGGAAAANGGANCAAACCCCTACCTTACANGGGT  
GGTTGNGAGGATTAAATTAAATGANATGNGTATGTAAAGTTTCTAACNCAGNGCCTACATATTGGGGG

TCCTCAATAAAAGGGAACCAGCAGCTNAAAAAAAAAAAAAAAAANNNNNNNNNNNNNNAAAAAAAAA  
 AAAAAAAAANNNNNNNNNNNTTTTTNCCCNAAAAAAAAANNNTTNNNAAANNNTTNNNCCCCCNGGGGTT  
 TTTTTTNAANNNGNNNNNNNAAAAAAAAANNTTTTTNNNNNNNNNNNNNNNNNNNNNTTNTNNNNNNNG  
 GGGGGGNNCCCNCCCCCNCNNNNNNNNNNNNNNNTTTTTNNNNNGGGGGGNGNNNCN

5

NAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCAG  
 CAGCCTAAATGTGCAGACTTTGTAACCAAGCCCACCCGAGATCGGTCTGTGCTTTACGTGACCACCA  
 TCTGTGCCTCCCTCGCTCCATCCAAATTTGTGTAGGCAGCTCCTTGGAGCCATTCTAAAAATATAGCT  
 10 ACACCAGGCCCTGGAACTGTAGTCAAGTAACAGGCTTAAGTGTTCCTCCTTGAGTTAAACCTCCA  
 TTAGATCTCTTTGAGGGACCTTTCAGCTGCAGGCATCAGTGTGTTCTGACAGCGAGACACGTTATGTG  
 TGTGTTTTCTATCTGGATCCAGGGCATCAGGATACAGTTCATCTTCTGTACTTCCTCTCTGGCATGCAG  
 TATTTCTGGACTATGTTTATAAGTCTGTTTAGTAAAGGGTGGGATAGAGGATACCAAGGGAGTTTCCA  
 AGGGACAGAGATGGATCAGTTAACGATAGTCAGAAATGAACTTAAAGTTGCCTTGAAAAACCAATC  
 15 ACATCTTATCAGGACGCATACCTTTATGTTTTCTAGCTCCTGTCGCTGAACTGGTTGCTGGGTAGCCCG  
 TACATTTCTATAAATCCTGCTGGACTCAGTTCTACTGTACTTCCAAAGAACTTCGATCGNGGGTTTAC  
 ATGGACATGTATTTAGGGGAGTGTTTACAAAGGGCGGATGGGCCCATATANTTGCCTGGGNAAATG  
 AACCCCGGGGANGGGTCTTTNAAATGGGCNAAAGNTTTTTATTAAACNCNAAAAAAAAATAACCCCTTT  
 GAAAAAAAAATTGGGCNNGNNCCTTTGGGGGGGCGGGGTTTTNTTTTTNTGGCNNNGGGGGGTNN  
 20 AGGGGNNANAAAAACAAAGGGGTTTTTTTTTAATTTTTTTNGGGGGGGGGGTTTTTTTTNNAGNGGG

ACAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCCGCC  
 ATGGGCTGTCTCGGAAACAGCAAGACCGAGGACCAGCGCAACTAGGAGAAGGCGCAGCGGAGGCC  
 AACAAGAAGATCGAGAAGCAGCTGCAGAAGGACAAGCAGGTCTACCGGGCCACGCACCGTCTGCTGC  
 TGCTGGGTGCTGGAGAATCTGGTAAAAGCACCATTGTGAAGCAAATGAGGATCCTGCATGTTAATGGG  
 TTTAATGGAGAGGGCGGCGAAGAGGACCCGCAAGGTGCAAGGAGCAACAGCGATGGTGAGAAGGCC  
 ACCAAAGTGCAGGACATCAAAAAACAACCTGAAAGAGGCCATTGAAACCATCGTGGCCGCCATGAGCA  
 ACCTGGTGGCCCCCTGTGGAGCTGGCCAAACCCAGAGAACCAGTTCAGAGTGGATTACATTCTGAGCGTG  
 30 ATGAACGTGCCGGACTTTGATTTCCCTCCCGAATTCTACGAGCATGCCAAGGCTCTCTGGGAGGATGA  
 AGGGGTGCGTGCCTGCTATGAGCGCTCCAACGAGTACCAGCTGATTGACTGCGCCAGTACTTCCTGG  
 ACAAGATTGATGTCATCAAGCAGGATGACTACGTTGCCAGCGACCANGATCTGTTCCGCTTGCCGNG  
 TCCTGGACTTCTGGAATCTTTGAAACCAAGTTNCAGGNGGACAAAAGTCAACTTTCCCATTTGTTGACG  
 TGGGCCGGCCAAACCCCNATGAACCCCGCAAATGGATNCCAATGCNTTCAATGAATGGGACTGGCCAT  
 35 TAATTTTTNGGGGTGGCCANCANCAANTTTCNAAATTGGGGCATTTTNGGGAAGGAAAAACCAAAA  
 CCAAACCCGCCTGGGGNGGAAGGGCTTTTGNAACCTTTTTTNAANANN

GCCNATNTGGAGCTNCACCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCTCC  
 CATGCTCCCTCTTTTGCAAACCTGTAAGTACTGTCTCAGCAAACAGCGATAATTTCAATTTCTCTC  
 TAGAATTGCTGAGAGACTTGAGTCACCAAACGTGGTTCACTACTGTGGAATGCATTGTTGAGAACAC  
 AGAAAGAAATTTAAGATTTCTGCTTTTCTGTGACAGTATTTGTTTCCGCCTCAGTTCAGAGTGTGAAC  
 GCAGGTTCTTGCAAGACTGCTATTTAACATTGCATGTGAGAACCTGGTAAATAGGCAGAAAATCTTG  
 GAGCTTGAAAGGAACCTCAGAAATGATTATGATGATGTTGAGTTGGGACCTTTAAGGGATCTCTT  
 45 TCAGCCTCTCTCAGTGCAGAAATCAGGACAGGGGTGCTTGTGGCAAATGGCTTTCCAACCTCGGTAGA  
 GTAACCTGCAATGCAGTTCCTCCTCACGAGGGAGCCGGTCCCATTTGTTAAAGAGCAAAGACTGATTGC  
 TTTATTGGTTCTAGAAGCAAAGCCAACTTACAGAGGAAGGGGATTTCTTTAAACAGCAGTTCAAGCAA  
 AAGCCAGATTGAACAAATTTTGCTCCCTGAAAAAAATTTTACTTCAGGGGGAGTAATATTGTGGGNTA  
 TTATAAATCANGAATCGTGAGAATGATGAAAAATATAATGATGCTAGCCAGCTTAGTCCATTAGTAA  
 50 ANCACTGATTATGTACACACACTGTCTAAGTGCTTTATGTNNATTGAACCCNGTGTAACCTCTCAAA  
 AATAAACCCCTTATGGAGANNGGGATACCATTATTCCTCACTTTTTTAAATGAAANAAACTGANGGCC  
 AGAAAAGGNTTTTACAGTNNNTTNCACANNTTAANTAACNNGTAGCAGNGGGGNCNAGGNTCCAANA  
 ACCTNGGCNTCTTAACTACTGNGCTGNCCCTGCAGNGGGGANCCCNCTGGNTNGTTNTNTCCCT

55







5 AACCTTCTGACCGANAAACAANAAGCTTNGAGTGAAAAAAATCCACGAAAAATGAAAAACCGCCTG  
 GANGGTTGGCGAACCATTCTTGNGGAAATTGGTGGGCCCCGGANCTTTNAAAAAAATACCAACAT  
 GGTCCATTTTTCTTGGGCCCCCTNGGAAGTTNGGGGCCANTTTGGATCAANCNCCCCCCTTTGNGGG  
 GGTNCCTTTTTTAAACCCGGGGTGGGCCCCCAATTNGGGCNCCCCCCTTTTTTCCCCANGGGAAA  
 CCCTGGCNCCCCCCCCCTTTTT

10 TNNNGNNANCTGGAGCTCCCCGCGGTGGCGGGCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGC  
 AGCAGCCTAAATGTGCAGACTTTGTAACCAAGCCCACCCGAGATCGGTCTGTGCTTTCACGTGACCAC  
 CATCTGTGCCTCCCTCGCTCCATCCAAATTTGTGTAGGCAGCTCCTTGGAGCCATTCTAAAAATATAG  
 CTACACCAGGCCCTGGAACTGTAGTCAAGTAACAGGCTTAAGTGTTCCTCCTTGTAGTTAAACCTC  
 CATTAGATCTCTTTTGGAGGACCTTTCAGCTGCAGGCATCAGTGTGTTCTGACAGCGAGACACGTTATG  
 TGTGTGTTTTCTATCTGGATCCAGGGCATCAGGATACAGTTCATCTTCTGTACTTCTCTGTCATGC  
 AGTATTTCTGGACTATGTTTATAAGTCTGTTTAGTAAAGGGTGGGATAGAGGATACCAAGGGAGTTTC  
 15 CAAGGGACAGAGATGGATCAGTTAACGATAGTCAGAAATGAACTTAAAGTTGCCTTGAAAAACCA  
 TCACATCTTATCAGGACGCATACCTTTATGTTTTCTAGCTCCTGTCGCTGAACTGTTGCTGGGTAGCCC  
 GTACATTTCTATAAATCCTGCTGGACTCAATTCTTACTGNACTTCCAAANAACTCGATCGGGGGGTTTA  
 CATGGTNCATGTATTACANGGGAAGNGTACCNAANGGNNGGATGGGCCCCATTATTTTGGCCTGGGN  
 AAAAGAAACCCNGGGAAGGGGTTCTTTTNAATNGGGCAAAAATTTTTTTTTTAATCCNAANAANAAT  
 20 AAACCCCTTTTGNAAAAAATTNGGGCNTGGGNCCTTTGGGGGGGCNGGGGGTTTTTTTTNTTTTGGC  
 CNTTNGNGGGGTAAAAGGGGANTAAAAAAACCAAGGGGTTTTTTTTTACAT

25 GNCCCTTTTANGTGNGGTCNNANTNANGNGGGGNATNTTCTCTTTTTNANCNTCTCGTNTTTCNCCTCG  
 GNTCTCGCNTCNTCNACTCCCNCACTCNATATGTNNACTTGTTAAACCCNNNTGACGCNCGNGGCGTGNT  
 NCCTGNGGGGGCENNNTATAGNGGTGNTCTTCTATTGNTNANNTNTNTNCGAANATCTTNTGGGNTTNN  
 GGACCANTNAAAGANNTNTNCTNTAAGCNCCNANTNCCNGNTCNTNNNTAGNNAANANNACNNNTA  
 TCNTGCTNGCNATGCTCGNAACNNCTNNNNNTTTNNATGNNGTNNTAANTNTNNCNGNNNNNGNAGT  
 30 TGNANATNTTNGCAATCNGCNAAAGTGNTGAGCGGNATNGGGATTGTTGNNNNNACCTTNTTNANN  
 ANNTCNCNTNTCNGANAGNTNGNCAGTANNNTGGANTNGNGGNNNNNCANTNNGCACNGTTGGCNA  
 GNGNTGGGNAGTNTNTGTNANNANTNTNTNTTTCGCGNCAANNNCNNCGGNTTNCNAAGTAAAN  
 ACTNTCTCAGNCNCNCAGANTGNNGTNATGNTTNNNGNNNNANCAGTNCAGNCTGNANGCNTANGNT  
 AAATANNGACGNAGTCGTAATCACNGGGNCTACNGNGNGGANCCNNANNANNGTNTNNGGNTNTCT  
 35 NNCNGNGTTNCNGAAGCCNNNGNTNANNNNTNNNCTAATGTGGAGGGAGTATGNNNTGGNTAATNT  
 TAGNANGCCTTGNTGNTNGNCCNAGNTCTATTNNNNNTNGGNGGTGGGNANNCTANCANNCCNNNGGA  
 CNGANTNNAAGGAANAGNGGNGNGGNTNTNTGNGNNNNNNNTTTGGAGGGGGCCGGTGGGGGCG  
 NTAGNNNGCNGNANAATNTTNGCNGGGNTGNTAGNNAANGNNCNNNTCNCCTGCNACAGNNGTN  
 GGNNGGANGNGANNNAANGACNNATNNAGCNAGNCCNNGNNAAANTNGGCGCAGNANTNNNCTNN  
 NAGGCNNGGNNGTGNGTGTAGTNTGNNNCNNNCCAGAGNACNGANNTGCAGCGNANGTGNTNAG  
 40 GANNCCGGAANCNGNNNAATNAGNACCGGTNCANNTAAGCANTNCNTNNNANTNNAGACGTGCNTT  
 GATAGNNCNTTGCNGCNCAGNGCNGCGANNTAATATNNGANCATAGCGGANCTCGTATCTNTAGNN  
 AGCTGNANGANTACCTCGNNNCNGAGNTCNANCNTGTGANNNANGGAGAGACANAGCGNGGNNNAG  
 ANATGNNNNNTNGTNTGTNCGACTGAGNTGNNTNATNTANAGAGGTGCGNCG

45  
 50 GNCCCTTTTANGTGNGGTCNNANTNANGNGGGGNATNTTCTCTTTTTNANCNTCTCGTNTTTCNCCTCG  
 GNTCTCGCNTCNTCNACTCCCNCACTCNATATGTNNACTTGTTAAACCCNNNTGACGCNCGNGGCGTGNT  
 NCCTGNGGGGGCENNNTATAGNGGTGNTCTTCTATTGNTNANNTNTNTNCGAANATCTTNTGGGNTTNN  
 GGACCANTNAAAGANNTNTNCTNTAAGCNCCNANTNCCNGNTCNTNNNTAGNNAANANNACNNNTA  
 TCNTGCTNGCNATGCTCGNAACNNCTNNNNNTTTNNATGNNGTNNTAANTNTNNCNGNNNNNGNAGT  
 TGNANATNTTNGCAATCNGCNAAAGTGNTGAGCGGNATNGGGATTGTTGNNNNNACCTTNTTNANN  
 ANNTCNCNTNTCNGANAGNTNGNCAGTANNNTGGANTNGNGGNNNNNCANTNNGCACNGTTGGCNA  
 GNGNTGGGNAGTNTNTGTNANNANTNTNTNTTTCGCGNCAANNNCNNCGGNTTNCNAAGTAAAN  
 55 ACTNTCTCAGNCNCNCAGANTGNNGTNATGNTTNNNGNNNNANCAGTNCAGNCTGNANGCNTANGNT  
 AAATANNGACGNAGTCGTAATCACNGGGNCTACNGNGNGGANCCNNANNANNGTNTNNGGNTNTCT

NNCNGNGTTNCNGAAGCCNNNNGNTNANNNTNNNCTAATGTGGAGGGAGTATGNNNTGGNTAATNT  
TAGNANGCCTTGTNGNTNGNCCNAGNTCTATTNNNNNTNGGNGGTGGGNANNCTANCNNCNGGA  
CNGANTNNAAGGAANAGNGGNGGNTNTNTTNGNNNNNNNNTTTGGAGGGGCCGGGTGGGGGCG  
NTAGNNNGCNGNANAATNTTNGCNGGGNTNGNTAGNNAANGNNCNNNTCNCCTGCNACAGNNGNTN  
5 GGNNGGANGNGANNNAANGACNNATNNAAGCNAGNCCNNGNNAANTNGGCGCAGNANNTNNNCTNN  
NAGGCNNGGNGGTGNGNTGTAGTNTCTGNNNCNNNCCAGAGNACNGANNTGCAGCGNANGTGTNAG  
GANNNCGGAANCNGNNAATNAGNACCGGTNCAANTTAAGCANTNCNTNNNANTNNAAGCGTGCNTT  
GATAGNNCNCNTGCNGCNCAGNGCNGCGANNTAATATNNGANCATAGCGGANCCCTCGTATCTNTAGNN  
AGCTGNANGANTACCTCGNNNCNGAGNTCNANCNTGTGANNNANGGAGAGACANAGCGNGGNNNAG  
10 ANATGNNNNNTNGTNTGTNCGACTGAGNTGNNTNATNTANAGAGGTGCGNCG

TTGAGNCCNANTAGGGGGGNCGCATNNCNGGGGGGCGGCTCGCTCTTAGACCTAGTGGGATTCCCC  
GGNNCTNGCAGGGANTTTNTGGTNAATNTGANNGAGNTNTTCATNCATNTTTANCNCNATTTCCNAAT  
15 ATNANAAANCANNGGGGGGCCATNCCNNTNTNANNANNTGGGNTCNTGANAACCTAATTNNNTNGCGAN  
NNTCTNATCTTTANNNNNAGGNNNNTGANTNGGATGNAGGNANNANCANATNANNTAGTCANAGAA  
NCTNTATGATTACNGATATNNAATTNACGTTACTGCGCGNNTANCNNTGNNNNNTNANATNAGACN  
AGAANANNGANATNGACANGNATNNTCTGTCTNNAATCNTTCATANNNNNNNCATGANTANCTTA  
GTANACGNTGCTNNNNNTNNGCNGGTGTNNTNCTCCCTTTCTCENAGCATGNCNNCTCENAGAGTNT  
20 ANNNAGNGGTNNNTNNCNGTGANTAATCTGATNNTNACCCNGTGANNNGNGACGACNCNNAGACAGN  
GNTNCTAGNGTGNTANNCGANNNNGNNNTNGNCCNCTNATNNNCNNCCGNGTANAAGATGTANNCTT  
TCTNCATNGANCTGNNNNNCGANGNNNNNTGCNTAAGTNGNTTCAACTTATNTGNGNATNNTNTNAN  
NCTNCGTAGTCCCNAATGATAATATNTNGTATNNTGTGTNACTCTGGANCNCNNNCNGTGGATNTANT  
25 TATCNATNAATTTNTCCGAANGNNNTGNGGATNNNNNTNCANTNCCGTTNACNCNGTNTGATNTNANC  
NTCGANAGANTNTNCTNTATCNCNNNTANAGANNCTNATNNAACNNGAANNANTNGNTGNNGATTN  
ANCNATNAGTCNTCTCTGAGNANGATNNNTTNNNTCNNAANATNACNATATNGNNTNNGCGNGCTN  
CGNANNTNNNATTTGGGTCNTTTNNNANNANCNNNCTCENNTNCTCGNGGNGACGNGNGGGCGGGN  
NNCGAGTANNANGNCNNANNCCNNNTGTCCNNTGGCENNAGANNNGNCNNNTNTGGCENNTNNAANANN  
TGAAGTCTACCNTNNNNNNNATCGANNTCGATGTGTANTNNAAGTNNNTGTATTNNTCANCANCAGNN  
30 CACNTGCTNANNGANNTAGANGATGNTCTTCCATNNGATAANCATTNTNGNGACGNACCNNAGAGTA  
TGNNTAANNATCENANNCTGTNANGANGACGNANGTACNNTNNGTGGTATGAGGNCNGAGGACNGA  
NGGAANAAAGNTAGAANCNATGGAGGTTTCGACGTNCGNACNNACGACGNANNTCNTACNGNTAGG  
TANTNTCGNCNGAANGNNTCTCCNGTNCNNNGNATCNTCGTNANGTNTGNACGNCNGAAGCGGANGN  
GATNNATNACNNGNANNAACGNAACTTAANNNNCGAACGTACGAANGGGACGTACGGNCNCACGCG  
35 AATGAANGTAGGTGACTCACGNCNCGCGNTNNTANNNGANNNTNTNGNATAGGNCGCNCTGNNNNNTA  
CNCNACGTTCGNACGGGAANGANAGNAATGNCNGAACGNTTACGCG

NAAAAGCTGGAGCTCCACCGCGNGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
40 TCGGCACGAGGACCAATGACAAAGATAGGAATACAAAGTGATTAGTTAGCCATCATTCTTGCACTAA  
GCACCAGAAGACTTGAAAAATCTAAAAAACAAAAAATCTCATTNAACTAGGATAATTCAAAAG  
GAATATTAAATCGATAAAACCAGGACTCACATGCCAAAGTTCTCATCAGNGGACGCTCACATNTTGGT  
TCCTTCCATATAAACTTGGTTGCCGNTNTATTTAAAGNCTTTTTTCAAANATTTTCATTGNGTTTCTG  
NTAAANCTAAANCTNTGNTCANNGCCNNTACNAAACANGGGACAATTCTTANACTGGCTTGAAAATC  
45 CCCCCGGNANAANCATGNGCNACTNTGNAANANTTTTTGNTCAAAAACATTACTGNCTGAAGCAACNT  
TCCTTTCTATTTCTTANTGNTACNAAGGACCNGCAGGGANAAATGNCCTNTCCCCANCAGNGAATACT  
GGTATGCAATTTACACTTGATGCTCAGGCCTGCTGAAGCTGAGGCTTACCTGTAATCATANCTTCCAG  
GGGATGAANTCTTCAGTTCGTCTAATAAGTNCCTAACGAGTGTGAAAGGCACTTTGAGGGGATTTTA  
TTAACAAAAACTTGGTTCTTTTATAAAAAACNATATATTCATTTTCCNCATACTATAAAGCCNNTGNG  
50 ACCTACCTACCTCTCAAAANGGACCTTTTTGGGGAAAAAAGCTNACATTTTTAGGGGAAAAAAGGAT  
CCCCTTTTACCCGGGGGTTAAGATTTTTTGGNATTGGGGGNCCATAANANCANGTTTTTTTTCAAT  
GNTATTTTACCAGGGAAAATCNTTTGGAATNANAACCTTTTACCCCCGACCCAAAA

GCCTATCTGGAGCTNCANCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCTGA  
55 GGAACCCCGGTGGCAGGGCAAGGTTTCGGGATCATGAGTTGGATTCTTTCAAGATTGGNCAGCCCAAN

AANCAGATTGTCCCCAAANCAGTGGANAGAGANTTTGANCGANAGTTTGAAAAANTCCANCAGTTGG  
 AGNACCAAACCAAAAGGNTGCAAAAGGNCTTNAAAAAAANCNCGNCCCCNNCCTGGCCNTGTTTAA  
 NTNNGNTGNNAAAATNTCNTNGNNNTNGNTNTCCANCCCCNTTTGCAANNAAAACCAGNANTTTTTNA  
 NCNTGGNNANNGCCTTGNNCNCAGCCNTNAANNGGNNGGNTNCNTTCACCCAGGAAAAGGTGACCCA  
 5 AATCCANAGAANTGTNATNGANCCTTNAAAAAAGTTCGGCATGTGTGTTCCCNANTCTAAATTGGCAT  
 GANAACCGNGGAGCCAGGCNTTGCAGNANTACAAAAGGGTGTGNACNCCAGGGTGGAAANNNCCA  
 AGGANAGGGAAAAACCGGCCNNGGCTCTGGCCAANNTCCACCAGGCCCGAAAAAGATTTACGCCATTT  
 CGGATANGNNTTTGGGGCCAAAAAACACGCATTNTTNGTNNGANANCCGCNNTTATACANACCGAG  
 TGTGGTATTTTTNCACCCCATTTTTGGTNCNTTTTTANNANAACCAAGNGGTTGGTGCTCTNCTTNAAN  
 10 TCTGCACAATATTTTTNAGAATTTTTNNCNCAGCNTTTTTACCCACCCNCTTTNTCTCTTTGAANAAC  
 CTNNGGGGAGGCGNNAAAAAACGAGGCCAGTTTTNNAANANATCTTCNNAACCNCTTTTTCNTTG  
 NTGGGNANNAANAANTTNCCCCTCCCGGTNGGNAAAANTCTTGTTGANAANAAAACNACCCNNCCTT  
 CCTTTNTGCCCTCTTTTTAAAA  
 15 GCCTATCTGGAGCTNCANCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCTGA  
 GGAACCCCGGTGGCAGGGCAAGGTTTCGGGATCATGAGTTGGATTCCTTTCAAGATTGGNCAGCCCAAN  
 AANCAGATTGTCCCCAAANCAGTGGANAGAGANTTTGANCGANAGTTTGAAAAANTCCANCAGTTGG  
 AGNACCAAACCAAAAGGNTGCAAAAGGNCTTNAAAAAAANCNCGNCCCCNNCCTGGCCNTGTTTAA  
 20 NTNNGNTGNNAAAATNTCNTNGNNNTNGNTNTCCANCCCCNTTTGCAANNAAAACCAGNANTTTTTNA  
 NCNTGGNNANNGCCTTGNNCNCAGCCNTNAANNGGNNGGNTNCNTTCACCCAGGAAAAGGTGACCCA  
 AATCCANAGAANTGTNATNGANCCTTNAAAAAAGTTCGGCATGTGTGTTCCCNANTCTAAATTGGCAT  
 GANAACCGNGGAGCCAGGCNTTGCAGNANTACAAAAGGGTGTGNACNCCAGGGTGGAAANNNCCA  
 AGGANAGGGAAAAACCGGCCNNGGCTCTGGCCAANNTCCACCAGGCCCGAAAAAGATTTACGCCATTT  
 25 CGGATANGNNTTTGGGGCCAAAAAACACGCATTNTTNGTNNGANANCCGCNNTTATACANACCGAG  
 TGTGGTATTTTTNCACCCCATTTTTGGTNCNTTTTTANNANAACCAAGNGGTTGGTGCTCTNCTTNAAN  
 TCTGCACAATATTTTTNAGAATTTTTNNCNCAGCNTTTTTACCCACCCNCTTTNTCTCTTTGAANAAC  
 CTNNGGGGAGGCGNNAAAAAACGAGGCCAGTTTTNNAANANATCTTCNNAACCNCTTTTTCNTTG  
 NTGGGNANNAANAANTTNCCCCTCCCGGTNGGNAAAANTCTTGTTGANAANAAAACNACCCNNCCTT  
 30 CCTTTNTGCCCTCTTTTTAAAA  
 TTNNNNAAAAGCTGGAGCTCCACCGCGGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
 GGTTCTCTGTTAACTCTTAATAAACTTACACATGCAAGCATCTACACCCAGNGAGAATGCCCTCTAGGT  
 35 TATTAATACTAAGAGGAGCTGGCATCAAGCACACACCCTGTAGCTCACGACGCCTTGCTTAACCACAC  
 CCCCACGGGAAACAGCAGTGACAAAAATTAAGCCATAAACGAAAGTTTGACTAAGTTATATTAATTAG  
 GGTTGGTAAATCTCGTGCCAGCCACCGCGGTCATACGATTAACCCAAGCTAACAGGAGTACGGCGTAA  
 AACGTGTAAAGCACCATAACCAATAGGGTTAAATTCTAACTAAGCTGTAAAAAGCCATGATTAAT  
 AAAANTAANTGACGAANGTGACCCTACAATAGCCGACGCACTATAGCTAANACCCAAACTGGGATTA  
 40 GATACCCCACTATGCTTAGCCCTAAACACAGATATTTACNTAACCAANTNTTCGCCAGAGTACTACT  
 AGCACCAGCTTAAAACTCAANGGACTTGGNGGGGCTTTATATTCCTTTNTAAAGGAGCCTGTTNTATA  
 ATCGATAAACCCCGGATAACCCTCCCCAATTTTTGGTTAAACAGGTATATATCCCGGCTNTTTTTAGG  
 AAACCTTAAAAAANNN  
 45 NNN  
 NNN  
 NNN  
 NNN  
 50 TNNANCAAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GCCGTGACAAAATGTGCTCCTGGTCAAAAAGTGCCCGACCATGATCGANNCTCNCCTTCATGTCAAGA  
 CTACCGATGGTTACTTGCTTCGTCTGTTCTGTGTGGGTTTTACTAAAAAGCGCAACAATCANATTCGGA  
 AGACCTCTTACGCCCAGCACCAGCAGGTGCGCCAGATCCGCAAGAAGATGATGGAAATCATGACCCG  
 AGAGGTGCAGACAAATGACTTGAAAGAGGTGGTCAATAAATTGATTCCAGATAGCATTGGAAAAGAC  
 55 ATAGAAAAGGCTTGCCAATCTATTTATCCACTCCATGATGTCTTCGTTAGAAAAGTAAAAATGCTGAA  
 GAAGCCCAAATTTGAATTGGGAAAACCTCATGGAGCTCATGGTGAAGGTAGTAGTTCTGGAAAAGCTCT







TTNTTTTTTATTGCAGGAGGGGGGNACTNTTCCCTTNCCCCNTTGGTTNNANGTTGGTNCCACCNTTT  
CTTTTTGTTCAANAAANTTTTTNTCCCAANNTGGCCTNTTTTAN

5 NAANNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGATTTTC  
CGGCACGGGGTCCAATTANAGTAACACTGGCCAACTTTTGAAATGTNTGNCAGCCCNCGGNTTCTCTT  
GGGGGNTTTTTNAATTACCCCNCTGGGGTCTTNCNGGTGNANGNNNGGTNAAGGNCCNGGNTTTTTAA  
NGGNNCANCNTTNATNACCCGGGNGNAAAAANCCGAANNCNAAAAAGNAGNAGNAGNAGNAGTTAA  
ACNNCTTNATNTNTTTNGAAAGCNNTCTNGCCCTNGNANNGGNNGNAGGGTNCCCNAAAAAAGNG  
10 AANCNTGGTNGTNGTTNACATTAATAATTANNNTNACCANTACCATTANNATGANTATTANATATTANA  
TATTANANACACANTTTGNGATAGAGAGAANTTAACANAAAAGCTCCCCGTATAAGANAATNTNGTG  
CTCAGATACTCTCCANCACAAAATGCGCACNNAATCNCGCCCNAAATGTGGAAGANTCTCAACCCGNGT  
GCACCCCAATANAAAGGNGACGANATNTNTTTAAAACANGAGAAANCACCCCGAACACNNNTANGA  
NNNATNTCTGTTGTAANACATTTNAGCACAAATGCNCGCNCNTNTATAAAANGGTGTNTTCCTCCCC  
15 CCCAGTGGTGGGCCCCCGNTTNTCATTNTTTTNTTGAAGAAAAATTTCCGNATTGACTAGACCAAGAA  
GGCTNCTTNTNAANTNTTTTTNTTANGTTGGGAGGAAAGACTTNTTTTTTAAAAAATAACTTTAAANCCA  
GCTTTNTTTAAAAAAAANTTTCCGCCNTATTTTNTTTTTTTTTTAAACAACAAGANAAACNNGCCTGGCCC  
TTNTTTTTTATTGCAGGAGGGGGGNACTNTTCCCTTNCCCCNTTGGTTNNANGTTGGTNCCACCNTTT  
CTTTTTGTTCAANAAANTTTTTNTCCCAANNTGGCCTNTTTTAN

20 TTNANAAANNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
AATTTCGGCACGAGGCTCGTGNGAGTGACNTCGNNTNTAAACCTGCGTGGAATCCCTGACNCAACCGC  
CGTGATGCCCAGGGAAGACAGGGCGACCTGGAAGTCCAACCTTCTTAAGATCATCCAACCTTCTGG  
25 ATGATTATCCAAAATGCTTCATTGTGGGAGCAGACAACGTGGGCTCCAAGCAGATGCAGCAGATCCGC  
ATGTCCCTCCGCGGGAAGGCTGTGGTGCTGATGGGCAANAACACGATGATGCGCAAGGCCATCCGAG  
GGCATCTGGAAAACAACCCGGCTCTGGAGAACTGTTGCCTCACATCCGGGGGAATGTGGGCTTCGTG  
TTACACANGGAGGACCTCACTGATATCAGGGACATTGCTGCTGGCCAACAAGGTGCCAGCTGCCGCC  
GTGCTGGNGCCATANCGCCGTGTGAAGTCCCTTNNGNCAACACAGAACACTTGGTNTGGGGNCCCCGA  
30 AAANACCTTCTTTTTCCCNGGTTTTTNGGCANTACCACNAAAAATCTTCANGGGCCCCAATTGAAATCCT  
GAGTGATGTGCAGCTGATTAAGACAGGAGACAANNNNNNNNNNCCNNNNNAANCCCCNCTTGNTGAA  
CAATGCTGAAAAATTTNCCCCCTTTTTCTTTGGGGCTTGGNNATTCCANCANGGGGTTTGAAAAATGG  
GNANNATTTTACAANCCCTGAAAGNGCTTTGACATTACCAAAGGAAAACTNTTGNANTTTCCCNNTTT  
CTTGGGANGGGCGTNCNCNAAATGTTTNCAGCGNGGNGNCCTTGCAAAATTGGGTTACCCCAAACC  
35 CGGNGGNATTTTTTGNCCCCCNTTTTNTTAATTNAANGGGGNCCAAACCCCGNCCCNNGGTTTTT  
TGNTNGGGGNNAACTGATTAACNCCCTTTNCCCCTTTGGGTGN

NNCAAANCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
40 CGGCACGAGGATACTTCTTTTTTTTTGAAAAATAATTGACTCTTTTATAAAGTATCTTTTAAATTAATAAT  
GTGCATAAGTTTGAACAGAGAAAACATTTAATTAATAAATGATACTGCATCTTCTAAAAGGTTTTTCA  
GATACATTTATAGTATATCAAGGGGCTTCTCACTGGCTCAGCGGTAAAGAATCCACCTGCAATGCAG  
GAGACATAGAAGACTCAAGTTCAATCCCAGGGTTGGAAGATCCCCTGGAGTAGGAAGTNCCCCACTCT  
TGACAGGTTTCTCTCTTCCATGGACAGAGGAGCTTGGCGGGCAGCAGTTTCATAGGGTTGCAGAGAGTC  
45 AGACACAACCTGAGCAGGACCACGAGCATAGTATATTAACATGCTTTGGCTCATCAACAACCCATGGC  
CAGTATGGTAGGCCAACTCTGATTTACAGGAAGATATCAAACCTTTCCGCACAAAAGCTTTTACAGTC  
TTTAAGNGGTTTTTCATTTTTCATGTAAAAAATAAGTNGCATTTGATAGTTTATATTGGGGGCTTTTGANC  
CTTANCTTGCTGGAGTTTGAAATTATTTCTGACTCATAAGNATAATCTCTNTTAATATTAANCTATTAT  
TGCTTGAANAACCAAGTTACAGGTCTTTTCTCAATTTCTTCNACCTTNGGTNAACCCNCCAAAANG  
50 GANCCAGGGGATTTTGAANGGAAAAAGGAANNCNTTGTCTGTTTTGGGTAAACCCNTTTTTTG  
GGAGTTGGTTGCNTTAANTTGCCGGAAGNNCCNNGGGGNTTACCTTTAANGGGGANCCCTTTGNG  
CCCCCANCCCCAAAAGGAATGGGNAANGAGNGNTCCCTGGAAAAATAAATTAANAANNNNNCCC  
N

55

TTNAAANNCNATCTGGAGCTCCACCNCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
GGAANAAAAAATTTTGGGGGGGGNCCGNNCCCNATTTTNCCTGTGGGGGGAGNAATN  
TANAAGCGGTNCTCNNTCCTGNTCCATGNTNTNAANAACNNTCNNGTCCCNTTGCCTGNACAGGAGG  
AACCCTTGNNATATNCNCAACCCTCCTTTGTCTGNTTAAGCATTANNCTGCTAATAGAGCGGNCTGACCT  
5 GTTNATCNAGNGATACATCCTCGCGGTGAGGGATTCTTGGNGCTGGGTAAACGNNCCTGACTGNNTAT  
TGCTGNTGAANCTGCACTACNATCTNNAGNATCAATANANCNTTNTTGTACTTTCCACGCTNNCTGG  
GGGNNANTGGGCCNTTCTCNTGCCTGTACCNCCTAGGGNNGGTAANAACATAAANANTTANATNNTT  
CCCTTGTGGCCTTACTTTCCATAATTTTCCNGGNCNCCTTGGNTTGNNTTGNNTTCCCTTCATANTGGC  
CNTTNGNGCTCCCTTTCCANNCNAGNGNAAAAGAAGGCCNCGNTGNTTAANAATAAGACCTTTTNTT  
10 CCGGCCANTTTTANCCNGGGGGAAAGGNANTCCNCCNCCNACCCGGGGNAACTNTTTTTTCCCAAN  
TAANNNTAAAGNTNNNGGGNAGGTTTCCCCCTTCCGGTNGGNCNCCGAAATAAAAGGGGGTNTTTCC  
AANCCCANGGNAACCAANCTNGTTGTNCCTTTCTNGGNCNCCCTGANNGACTNGCTTAAAAANG  
CNCCNTNTNTTTTCCCCCCCCCCCCCCCCCCCCCTGGGGAAATNANNTCCCCCCCCCCCCC  
CCCCCCCCCNNTTCCNAANCNTTCTTTTANAAANAAAGGNNGGAGCCNTTTTCCCTTAAATTTTCTN  
15 CCCCCNTGGACANCNAAAAGGGTTTTTCTCTTCCCCCCCCCTTTNTTTTTTTTTTTNGGAANCCCC  
CNNCTNNGGGTCCCCCT

TTNNGCCTATNNGGAGNNGNATNNCAGNGGCGGCCGCTCTAGAACTAAGTGGATCCCCCGGGCTGCA  
20 GGAATTCGGCACGAGGCTCGTGTGAGTGACATCGTCTTTAAACCTGCGTGGCAATCCCTGACGCACC  
GCCGTGATGCCAGGGAAGACAGGGCGACCTGGAAGTCCAATACTTCCCTAAGATCATCCAATCTT  
GGATGATTATCCAAAATGCTTCATTGTGGGAGCAGACAACGTGGGCTCCAAGCAGATGCAGCAGATCC  
GCATGTCCTTNCGCGGAAGGCTGTGGTGTGATGGGCAAGAACACGATGATGCGCAAGGCCATCCG  
AGGGCATCTGGAACAACCCGGCTCTGGAGAACTGTTGCCTCACATCCGGGGGAATGTGGGCTTCG  
25 TGTTACCAAGGAGGACCTCACTGAGATCAGGGACATGCTGCTGGCCAACAAGGTGCCAGCTGCCGCC  
CGTGTGGTGCCATAGCGCCGTGTGAAGTCACTGTGCCAGCACAGAACACTGGTCTGGGGCCCCGAGAA  
GACCTTCTTNCAGGCTTTAGGCATCACCACGAAGATCTTCAGGGGCACAAATTGAAATCCTGAGT  
GATGTGCAGCTGATTAAGACAGGAGACAAAGTAGGCGCCAGCCGAAGCCACGCTTGNAGAATTTGC  
TGAACATTTTCCCTTTTTCNTTNGGCTGGNCATTCCACAAGGNGGTTTGAAAAATGGCAGCANTNTAC  
30 AACCCTGAANNGCTTNNCNTNNCNAANGAAANNTTGNATTTCCCCCTTTCTTGGGNGGGCGTNC  
CCCAATGGNTTNCNACCGGGGGNCCCTTCCAAAATTGGGTANCCCTAAACCCGNGGGGATTTTGGG  
NCCCCATTTTTTTTATTNAAANGGGGGNCCAAAAGCCCCGTTNCTTGGGNTTTTTNTTTT

GCCTACTGGAGCTNACCGCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCACAC  
35 GCCAGGAGCGCTGGGCTCCAGCCTTCTCACGCAGGTGGCTTCTCAAGGAGCTACCACCGTGTGTGAGC  
TCCAGAGTAGGTGCAGATGTTTTATCATCATCTTCCACGTTGTTGACACTGTCTTACCTTCTCAAGTTCC  
CCAAGTTCCCGAGAGCTTCTCCTCTGCTATGCATTTTGTCTTACAGCGCAGCTTGCAGTCCCTTGCTA  
AAGATGATTATAAGCTCTGCATAGTGTTAAGCTTTATTGTGGTTATGTGTATGTTTCTTCTTCTTGT  
40 AAGCAGACCCACACCTTTCCAGGTCAAAGTACAGGATAGAGTGCTATCCTTCATCTTTACCATTTCTT  
TACTCCGTTTAAAGACTTCCAGAACTAATCCAGAGTTGAGCCAATTCAGAATTGACTGTAATTGAAC  
ACAGGCTAAAAGTATTTATGGGGGGAGTGACTTTTAGCATGAGTTTTCTGATTTTTGTAGCTGCTAACC  
TTTTAAATCTTTATTTGCAGTTTATGTAACAGTTGTCTTAAATTACATGATAAAGCAGTCTGTTCATTT  
TTTTTTTTAATGTGGCTTGTAGAATTTTAAATAAATGAGCTTANGTCTGTTTTTTCATGTGGAATGCAGA  
45 TGGGTGCTATCAAAGCCTCTCCCCATCACTATAGNGTAATAATATTATTACACCCCACTGAAATGGAT  
TCAAACTAANATTTTTTTATNGTTAACCTTTATTGGTTCTTTCAAAGNGGTGGCAAATGTACCGAN  
TGGAACCTGGTTCTTGGNCTGGAATATATAAACCCCTTCCAAANGGGTTNTTTTTGGGGGAGAAAAT  
GGGGGGGAGATTTTTCNTAAANAAAGAAGGCNGGATCNGGTNATCNTCNANTTTTACTTGGTCCC  
TTAAATNTTTTTGGGGGGGGATNCCT

TTTAAGCCNATNTGGAGCTCCACCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTTGN  
50 AGGANTTNGGNTCGAGGCTTTTATTGAGACCAACCAAGGACCCAGGGGACCCACACCTGGTGTNACG  
GTATCCGTGGTTCTCAGCCCCANAATGGTGGGCTTGNNTTCCAGCCCCCTGCTGTCCCCACCAAGGGA  
55 CAGGCCNTCTCTGTGCCCTGCCTGGGATGGAGGACTCGATCATNAAATACNACCTCCTTTAAACATC  
CANCCCTAGTCNTCCCANCCAGAGCCTGAGGGTCATTTGANAGGAAGTGAAAGTGGCNTGCNTCAA

TGGACAGNACTCANAAANCCCTTTTATAAAGGATATTTAATATCGNGNCCCCAGCTTNGTGGCNGGTT  
TCANTTTTCTGGCCAGGNTAAAGTNTGGCTGGGCCTACNCTGCCNTGACATCTCTCTGACTGTTACCAC  
ACGAGCTGAGTGCAGTGGANNAATGCGGCCTCTTTTNTGCCAGGAGNGCAAAAGTGCCAAGCNGTT  
GTTCNACACACNANNANATNNCGTNTTNCANANTGTGNGACCACCNACCAACTATGACATAACGACN  
5 TCTGTAATNTNTNTAAAAAAATATATTTTGGGNGCTGTCTTGAAAAAANNTC  
NNGGGGGGGGNNCNCNACCCTCNTTAATTCTGCTTTTNNAGNGGGNANTTATNTNAAAAATNTNTCTT  
TNTNACCANTTTTTTANCANNNGTTTCNTTNNCNTNNGTGTTNATTTTNTTNTNNAACNNACCNAACNTN  
CANAATTNNNGCGTTTCCANCCTCTCNTNNNTCCNTCNNTNCNTGNTNNTTNTTATTTTCNGAACATANT  
CATNTTCTTCTTCNTTNCNNCATAACNTNTNTNCCNNNTTNTCTTNTTATTTCTNNTTACANTCCTNA  
10 ANCAAANNANTANAATTTATNTGNNAAANGNTCCCTATNTNTTNNNTANTACNTNTCANATTCCACNT  
TATTANATCATNATTTNTCTCTTCCCTCANANNCCNTNCCC

NAAAACTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
15 CGGCACGAGGCCCTCATCTCCGGACCACACTCAGGTTCTTGGTGCCGAGTCCAGGGGATCC  
ACCTCTGTCTCATCCGTGGCCTCTGCTGGTCTGCCAGAGGCCAGCACTCAGGAGACTCCTGCAGGG  
GTTGCACCTGGCCCAGGGCACCTGCATTGTCAGATTTAGTTTCCCAATTCTCCTCTTGGTACCAAGTCG  
CTTCTCCTACATCTGNTTAAANGCTGNATTCACCTNACGCTGGANCTNTGANCTCACACACTTGCCCTCC  
CGCCCGCCTCCCCCTNCCCAGCGTTTGACCCCGAAAGCCCTCTGAGGCAGANAACAGAAATGCCAGAN  
20 CACCCGCTTTTTATGGGGCACTCTTCANAAAGTCTCTGAGGCCCTGAAAAGAAAGAACTACNTNATGG  
AAACCATTTTGCANCCTNCANCACGGGCATTTATCTNAATAATCATTTTCAATTTAAAAATGTGGGTCAAAC  
ATATAAATCATATCTTGAAAGAAAGNATTTTGGTGCCACAGAAATCGCCCTGTGTTCTTACCACCTAAT  
TTGAAAAATGTGTTTTGAAGTCANGAAAGAAAGCCAAACAAGCCTGNGGCCTGGGGTGTTTTTTCCCC  
ACATGCNCCCTTTTCTTTTCTGTGTNGCCCAAAAANNANNTCCCCGCTCCTGNGCCAAAAAGGNGC  
25 GGGGGAGNNCCNACCCCTGAAGNTAGGNCACCTCTTCTGCGNATNTTAAAAANTCCCCCTCCCTTNC  
ANAANAAAGGGGGTTGGGGAAACCCCGAAGGNGGCCGCTCCTCAACCTGGTGCCTCATTACCT  
NGGGNNCCCNCCGACCCCTGGNGACAAGNGGTTTCANTTANNAACCCCNNTNTTTTTNGCCCTTAA  
AAGCCC

NNNCNNNNCNNNNACNNNNCCTTNTTANTNNNNNTNNNTNNNCCTCTCNCNTANNNNTCCCTCANTTC  
CTTNNNNNTCTTNTNTNTNANNGNNTNGNNATNAGTNGCTAATATCNCTTTTGAGNANNNTGGAGCT  
CCACGCGGTGGCGGCCGCTCTANAAGTGGATCCCCCGGGCTGCAGGAATTNCGGCACGNGGTTCA  
ATTAAGTAACNCTGGCAACTTTGAAAANGNGTGTACAGCCAACGGNTTCTCTTGNGGGCTTTNNNAA  
35 TNACACCACCTGTGGTCTTACNGGNTGAAGTGTGGTTCACGGCCTGTGCATNTCATNGGACCAGCACT  
TANTANCCGTGNANGAAGATGCAGAGTCNNAANAGGAGGAGGATNGANGANGTGAAGTCTCTGAGA  
ATATTTGGAAGCTGTTCTTGCCCTGNANATNGGNTGCAAGGTTCCCCACAAATAAANTGAATCTTG  
CTTGNTTGATGAAANATNAAGATNATGATTGACNATGACNATTGATTGNATGATGATCANANANGAN  
NTATGATTGACCGATTNCTTGATTGANNNAAANNCTTNAGANTAAATNTTTNCANGTNNAAGAAACT  
40 CTGTACCCAGAATACNTCCTANNNCNAAAAATNGCACCANNNTNATCNGTTTTNATANAATNNNAGNTNA  
CCTCAAAANTACTCGGTNNANNCNCCCANTTNATTCNAAAAAGGGNTCNCNTAANTTCCCTTTCCANT  
AAANNTCCNNGGGAACAATAAACNNCCCGGNANNTNCCACCTTNAAGGNAACCTTANCTCCTGG  
NNNTCANNNACNTTTNAACAGNGCANNATAAGNTTGGCCNNGCCCATNGGTTNCAAAAAACNTAN  
AGGGNNGGGTTTTNCCTTTTCCCCAAAANTNNNNNTNANTCCNCAANNTNNTTNTTCGNANTCCATT  
45 GGNNTAATNAATNTGGNTTNNCCGGNANTNGACCTGGNACCCANGGGAANNNGGCNAATTNNANA  
ATAANCNTTCTAGGCNNAATNGGNAAAGNAAANACCCTTCTTTTAAACAATAAATATTCTCTTTNAA  
CCAGCNTTCNGGNAACAAANAANATCTTNCANTTCTTANATTNCAAAATNTACTNNNNAAANCCGANN  
TCNGNANTTACTCCNCAANNNGNNCNATTTNTGTATNACGACCGGCGTAGGGAGTGCNCTAAATAT  
TNTTTCTCTCGTNACCCCGTNNNTAGTGAAATAANTANNGTAGTCGGNNCCACACGATCTANCTCT  
50 NTNNGCTCCTNTNTAAANANTNTGTGGTCTNACTGTNCTNAAACANCNAGGGTNTGNTCG

NNNCNNNNCNNNNACNNNNCCTTNTTANTNNNNNTNNNTNNNCCTCTCNCNTANNNNTCCCTCANTTC  
CTTNNNNNTCTTNTNTNTNANNGNNTNGNNATNAGTNGCTAATATCNCTTTTGAGNANNNTGGAGCT  
55 CCACGCGGTGGCGGCCGCTCTANAAGTGGATCCCCCGGGCTGCAGGAATTNCGGCACGNGGTTCA  
ATTAAGTAACNCTGGCAACTTTGAAAANGNGTGTACAGCCAACGGNTTCTCTTGNGGGCTTTNNNAA

TNACACCACCTGTGGTCTTACNGGNTGAAGTGTGGTTCACGGCCTGTGCATNTCATNGGACCAGCACT  
TANTANCCGTGNANGAAGATGCAGAGTCNNAANAGGAGGAGGATNGANGANGTGAAACTCCTGAGA  
ATATTTGGAAAGCTGTTCTTGCCCCGTGNANATNGGNTGCAAGGTTCCCCACAAATAAANTGAATCTTG  
CTTGNTTGATGAAANATNAAGATNATGATTGACNATGACNATTGATTGNATGATGATCANANANGAN  
5 NTATGATTGACCGATTNCTTGATTGANNNAANNCNTTNAGANTAAATNTTTNCANGTNNAAGAAACT  
CTGTACCCAGAATAACNTCCTANNCNAAAAATNGCACCANNTNATCNGTTTTNATANAATNNNAGTNNA  
CCTCAAAANTACTCGGTNNANNCNCCCANTTNATTCNAAAAAGGGNTCNCNTAANTTCCCTTTCCANT  
AAANNTCCNNGGGAACAATAAACNCCCGGNANNTNCCACCTTNAAAAGNNACCCTTANCCTCCTGG  
10 NNNTCANNNACNTTTNAACAGNGCANNATAAGNTTGGCCNNGCCCATNGGTNATTNCAAAAAACNTAN  
AGGGNNGGGTTTTNCCTTTTTCCCCAAAANTNNNNNTNANTCCNCAANNTNNTTNTTCGNANTCCATT  
GGNNNTAATNAAATNTGGNTTNNCCGGNANTNGACCTGGNACCCANGGGAANNNGGCNAATTNNANA  
ATAANCNTTCTAGGCNNAATNGGNAAGNAAANACCCTTCTTTTAAACAATAAATATTCTCTTTNNA  
CCAGCNTTCNGGNAACAAANAANATCTTNCCANTTCTTANATTNCAAATTNTACTNNNNNAANCCGANN  
TCNGNANTNTACTCCNCANNNGNNGNCNATTTNTGTTCATNACGACCGGCGTAGGGAGTGCNCTAAATAT  
15 TNNTTCTCTCGTNACACCCCGTNNNTAGTGAAATAANTANNGTAGTCGGNNCCACACGATCTANCTCT  
NTNNGCTCCTNTNTAAANANTNTGTGGTCTNACTGTNCTNAAACAANCNAGGGTNTGNTCG

TNNNCAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
20 AATTCGGCACGAGGGCGAGACGAGCGAGGCAGGAACGTGGACGTCGGGTCTCTCGTTTGACCGCGA  
AGACACCTCTNCTGCAANGATGGTCANCGTNCCTAAANCCCGCAGGACTTNTGTAAANANGNGTGGA  
ANGCNTCANCTCNCAANGNGACCCAGTNTAANANGGGCAAANATTCNTGTNTGCCCAGGGAAAGA  
GGCNCNTGATCGGAANCAAAGNGGNTNCGNGGNCAANCCAANCCANTTTTCCGGANGAAGGNTAA  
ANCCACCAANAAGATCGTGCTGANACTTGATTGCGTTGAGCCACCTGCANATCCAANAGGATGCTGG  
25 CCATTAANAGGNGCAGGCTTTTTGAACCTGGAGGANATAANAAGAGAANGGGCCAAGGGATCCAGTT  
CTAAGCTTTGGAATCCTTTGGTNTCTTANGTTTGGANAANAATAATGTTGAAGTTACAAAAAAATTGCC  
TGAATGANAATAAATNCCGCGATTTTCTACTTNNNNNNNAAAAAATAAATAAATAAATAAATAAATAA  
GCCCGGGCCCCAATTTNCCNTATAGGGNGNNNNNTNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
NN  
30 NNN  
NN  
NN  
NN  
NN

TNNNACAAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
AATTCGGCACGAGGGTCTTCTGGCCCCGTGGCAAAGACGGTCGNATTGGACAGCCTGGTGCAGTTG  
GACCTGCTGGCATTCTGTGGCTCTCAGGGTAGCCAAGGTCCTGCTGGCCCTCCTGGTCCCCCTGGCCCTC  
40 CTGGACCTCCTGGCCCAAGTGGTGGTGGTTACGAGTTTGGTTTTGATGGAGACTTCTACAGGGCTGACC  
AGCCTCGCTCACCAACTTCTCTCAGACCCAAGGATTATGAAGTTGATGCTACTCTGAAATCTCTCAACA  
ACCAGATTGAGACCCTTCTTACTCCAGAAGGCTCTAGGAAGAACCAGCTCGCACATGCCGAGACTTG  
AGACTCAGCCACCCAGAATGGAGCAGTGGTACTACTGGATTGACCCTAACCAAGGATGTACTATGGA  
TGCTATCAAAGTATACTGTGATTTCTTACTGGCGAAACCTGCATCCGGCTCAACCTGAAGACATCCCA  
45 GTCAAGAACTGGTACAGAAATTCGAAGGCAANAACATGTCTTGGGTANGAAAACTATCAACGGNG  
GTACCCANTTTGAATATAANGTTGAAGGANTACCNCAAGGAAANGGCTACNCACTTTGCCTTTATGC  
GTNTGCTGGGCAACCATGCCTTTTNAACAGNCNCTTTCCAATTGCANNAACCNNGTTGNANCCCTN  
GAANGAAGGAAACTGGCAACCTGGAAAAAGGNTGGCATTTTTGCAAGGGATCCCATTGGATGTCCAAA  
CTTTGTGGCCCNNGGGCCAACCAGCANAATTNCCNTTACCCTGGTTNTTGGGAAAAGGGGTGGCTTN  
50 AAAAAAATAAATAATGGAATGGGCCAAAAAATAATTTTNNNNNTTTTNAACCNCCNNGNCCCTT

TTNANNAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GCTTTGCTGAGGGTCACATTGAGCTCCCAGCGACTTCAGGGGCATCTTTAGGAGTCAGCACTATGGCA  
55 GAAGACATCCAGGCCAAAATCAAGAACTACCAGACTGCTCCTTTTGACAGCCGCTTCCCCAACAGAA  
CCAGACCAGGAAGTCTGGCAGAACTACCTGGACTTCCACCGCTGTGAGAAGGCAATGACCGCTAAA

GGAGGTGATGTCTCCGTGTGTGAATGGTACCGGCGTGTGTACAAGTCCCTCTGCCCCATATCCTGGGTG  
TCAACTTGGGACGATCGCCGGGAGAGGACGTTTCCTGGGAAGATCTGAACTGGCTCCATCCCACC  
TCTTCTGTCTCCGTCTTCTCCCCAGGGTGGTGAAGGGGGACCGGGGTACATGGTGATCCCCACCTG  
GGATCCTGACTCATGGTATAACTAATAATAAATGCTCGTTGGAAACGTGAAAAAAAAAAAAAAAAAA  
5 AANTTNGGGGGGGCCNGGGCCNCAAATCCCCCTTNTNNGGGGGTGGTTTAANNNNNNATNGNNNNCN  
CNNNGNCCNNNGGNNCNCCTTNNNTCNTACTANANTNGNNNNNNNNNNNGNTNNNNCTNANGNNNN  
NGNNNNATTNNNTTTTTNN  
CNNANANNNTNGGNNNNNAAANNNNNNNNTNGGNNACTTGGNTTTCNNNTNNNNNNNNANNNNNNTN  
NNNTTTTGCCCAATANAAAAGCCNTTTANNNCCNAAACCNNGNNNTTTCNNNTTGNNTTTNNNNN  
10 AAANNNNNAAANTTNNNNNNNNCCNGGGGGNNNGNNNAANTNTTNNNNNNNCNNNNNNNNC  
NNNNNNNNNAAAANNNNNNAANCNGGGNNCCNNNNNNNGGNNNNNC

TTNNANCCTATNTGGAGCTNCANNNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
15 GAATTCGGCACGAGGAATANNGAGAGTGCAGCTGGCATAAGCTGACCCANGAGNGCCACANAACGA  
ATGCTCCTGCCTTCCCATGGAGACTGCATGACCTCATGTNTGTGGAGCGCATTAGGGTCTTGAGTAAA  
ANGGAAAAAAAAAAAAAAAAAGGTTCCCTGNTGCTCTNATTTNTANNTACNCNGTNNACTNNNGTGGGNAA  
ACCANGANTNNNTNGCCNGCTTNTTTCNNGAGTGNGTTTTTGTGTGNTCNACAAAANCNGGANGNTAT  
NNGCTTNCNNCANAANTNGNNNNNAANGGAANACTATNCTTGNCTATTATACCTNCANTGAAACNG  
20 NGACGGTGNAANTNATNCCTTTAGGNNNTNACTACACAACTTGCCNAANNATNNCTNCTCTGANA  
AAGGAGGAATTCNCNGGGATGNTGGANGNANCGNANGNTGGCCACCCACANTATTTNNGANTACG  
NTTNTNATGNGTCTTTCNTTGGTCTNGGAATNTTNCCTNCCNCCAATTNTGTNGACACANNCCATTT  
CNATGTNTNCNGTCTTTTCCCTGCNCTNNTTTGGGTGAGGGGNTTCTTTAANGGGGGCCCTNTGCGG  
25 NGGGAGCNCCTTCNCCCCCCCCCTTGACAACTTTTTTTAAAAANGGCNAGGGNGGGCCTTTNTTN  
TTTTNCCCTTTNACCCNGGGGGGNAATTNNGGNTGGTTTTTCCNGACCNTTNAACCNNGGNNNNNTTG  
NANAACCNCCCCCCCCCATAGGAGGGANAAAANCCNTTTCCNTTTCCANCCCTGGNGAAAAATTT  
TTTTGGGCCCTTTTNGGNNCCCAAAAATCCCTTTAAACCAAAAGTTGTTTTTTGGNAAACCTTGANA  
TTGCCCTTG

NCNNNATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGTGA  
CAATGATCTTATAATATTCTTGACCCTTTTTATCATCTTTCAACTAAAAGTTTCAAAACACAACCTTTTAT  
CACAATCCAGAACTGACACCAACAAAAATATTAACAAAAACACCCCTTGAGAAACAAAATGAACGA  
AAATTTATTTACCTCTTTTATTACCCCTGTAATTTTAGGTCTCCCTCTCGTAACCTTATCGTACTATTCC  
35 CAAGCCTACTATTCCCAACATCAAACCGACTAGTAAGCAATCGCTTTGTAACCTCCAACAATGAATA  
CTTCAACTTGATCAAAACAAATAATGAGTATCCACAATTCTAAAGGACAAACATGAACATTAATATT  
AATATCTCTGATCCTATTTATTGGATCAACAAACCTACTAGGCCTATTACCCCATTCATTACACCAAC  
AACACAACTATCAATAAACCTAGGCATAGCCATCCCCCTGTGAGCAGGAGCCGTAATTACAGGATTCC  
GCAATAAACTAAAGCATCACTTGCCCATTTCTTACCACAAGGAACACCCACTCCACTAATCCCAATA  
40 CTAGTAATTATTGAACTATCAGCCTTTTTATTCAACCTATAGCCCTCGCCGTGCGGTTAACAGCTAAC  
ATCACTGCAGGGACACCTATTAATTACCTAATCGGAGGGAGCTACACTTGCACTAATAAGCATTAGC  
ACTTACAACAGGCTCTAATTACATTACCATTTCTAATCTACTAACAATTCTAGAAGTTTGAGTAGCT  
ATAATCCCAAGCCTATGTATTCCTCTTCTAAGTCAGGCCTATATCTGNATGGACAACCCCATATGGCC  
NCACCCAACTCATGGCTTATCATATAGTAAACCCCAAGCCCTTGACCTTTTTAAANGGAGCTTTGN  
45 CTTGGCCCTTTTTAANAACATCCGGGCCTTAACCATTTGGGAANTTCACCT

NCNATTTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAANTT  
CGGCNCGAGGTTCCAGATGGCCGAAGTCCACAGGCAGATTGAGATCAGCTGGAAGAAATGCTGAA  
50 GTCTTTTCAACAGAGCTGCTCACACAGCTGGAGCAGAAGGTGGAGCTGGACTCCAGGTACCTGAGTG  
CTGCCCTGAAGAAATACCAGACGGAGCAGAGGAGCAAAAGGTGACGCGCTGGACAAGTGCCCAAGCTGA  
GCTGAAGAACTCCGCAAAAAGAGCCAAGGGAGCAAAAACCCCAAGTACTCGGACAAGGAGCT  
GCAGTACATCGATGCCATCGGCAACAAGCAGGGTGAGCTGGAGAGCTACGTGTCCGACGGCTACAAG  
ACCGCCCTCACCGAGGAGAGGCGGAGGTTCTGCTTCTGGTGGAGAAGCAGTGTCCGTGGCCAANA  
55 ACTCCGCGCTTACCACTCCAAGGGCAAGGAGCTGCTGGCGCAAAAGCTGCCGCTATGGCAGCAGGCC  
TGTGCCCGACCCCAACAAGATCCCCGACCGCGCCGTGCANCTTGATGCAGCAGATGGGCAACAGTAAC

GGCTCCATCCTCCCAGCGGTCTTTTCGGCCTTCCAAGTCCAACCTGGTCATCTCAGACCCCCATTCCAGGG  
GCCAAAGCCCCTGCCGGTGCCCNCTGAACCTTGCCCNATTTGTGGGGGCGGNTGTCTGNCCAAGAAAA  
ACCCCCCCTTATTGAATGGGGGTTTCGGNCCCAACAGGGGANGACTTACCACCCCTTGGGCTTGACC  
CGNAGGGCCCCCCCCANCCCAAATTCCANTTCCCCCCCCGNTNTTTTNAAAAACANGNTTGGGCNTTTTT  
5 NTTTTNNAANATTNTTTCNGGGGNANNAAAAANNNGGGCCCCNAAAAAANNTTCCCCCCNATTGAAA  
AAAAAANCTTTCTTTNTTNAACTTCATGGGCCCCGGCCGGAACNCAACT

NNANANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCTTC  
10 TGTGGAANAANAAGCTTTGGTCCACAACCTATTTCCCGACTAGANCANTGNNGNATNNATGCCANTG  
ATGNGAAGAAATNGGAAGAANCTGGATTTTCACTGTANAGGCTGNTGCCTATGCACCNAAAAANGA  
NCTACNNAATATTAAGGGGATNAGTNANNCCNNAGCTGATACAATTCTNACTGAGGCAGCTAAATTA  
GTNCCNATGGGTTTACCCTGCTGACTGAGTTNCNCCAAAGGCGATCTGAGATCATAAGATTACTAC  
TGGCTCCAAANAACCTTGACANACTGCTTCAAGGANGAATTGAGACTGGATCCATNACANAGATGTTTG  
15 GAGAATTNCGAACTGGGAAGACCCANATCTGTATACATTGGCTGGNACANGCCAACTCNCCATTGAC  
CGACGTGGAGGTGAAGGAAAGGCCACTGTGCATTGNCACCNAAGGTACCTTTAGGCCTGAACGGCTG  
CTATCAGTGGCTGAGAGATATGGCCTCTCTGGCAGAGANGTCCNNGATAATGNATCATATGCCCGANG  
GNTCTCACAGACCACNGACCCAGCTCCTTTATCNNGTNNCTGCNCANNANGGGTGTGAGTGNACAGGG  
TATTGCACCTGGTTAATTTGTAGANAGGNGCCACTGNACCTCTANAGAAACGNGACTNTTTTNGGTTN  
20 CANGTGAANNTTTTNAACCCANGGCATATTCCACTTTTGGTTCGGGTNTTCTTGTAGGATTGCCTNTTN  
GCCAACTTGGGNNGGTNAAATTTNGGNGGGNNCAAGGNGNGNATCCCCCACCCTCGGGGNGNG  
NCCCCAGAGGNTTGNNGCAAGCCCTNGTTTGNCTTCCNGANTNCNAAAAAAACCTTTTTNGGGG  
GAAANTATTAATTTGTTT

NANNNCGANGNNNNNANNTNNNATANATTNNANANANNANNTNTNNNNCNANCCNNCCNTCTNTC  
TNTNNATATGGNATTCTTANGCANCTCNATATNGGAGNGNGGANCGAGGNAACATCTCTNTTTGAGNC  
CTCNAGNGAGTNGNATTACAGTNGNNNTNCTTCTNAAAACTAGCGGATCCCACANGNGTGGNTAGG  
30 ATACACCCNCANGAGGCCCTNNNTGNCCCTTTNAGCACGGTCTNGGGGCCGNGGGGCATCNNGGGNA  
CACAGACGNGGGGGACNTCTATAGCTNACNGCAANANTATNNTNNTAGCANAACCTGTTTAGTCNCNC  
ATGGCGNTNACTGNCNNATCACANTCCNATNNNNNANCTTTCTGNTCTNGNTNTTTTNGACNTATANN  
TTGNNCTTTTCGTAATNNTNTNNNTNNCNNNNAGANNGANACNANATNNACTCNCCGCTNTCNTGAC  
ACCCGANAGTCGATNAANGATAGNATTTTTNTNATACNTNNCGCNTNNTNNGNTCGNANACTTGNTCN  
TNTAGAGTNTNTNCANNCGACTTTTTNTANATANTNAATNTNNNTAGTATNGTANANANTCACNCA  
35 NGNNACNCCATNANANANNGCNTCNNTNANTTCNGANNATACATGATANANGTNTCAATTGNTGCT  
TGANTCTTCTNNATNNNANCNATCGAAGNNTTTNACTATNNCTTTANANNNCCANNTNTNTCACTTN  
ANTTNNCNNNNATTAGNNNNNNNNNATNTGAGNGTAATTNNNATCTNATTATTTNCNATATTNCTTC  
NANCTNCTNNNANTNTGTNNNANGANGTTGTNNNNNTNNNCAANTCNANANTNCCTTTCTNTATTNNC  
ATANTNATGNTGNCCAATCNTNNNACCTNAANCACNCNCTTATTNNCNTNCNGCTATGCTNCNACNTC  
40 TANTNACTATANNACGTATCNTNTTNTTCGCCNCNTACNCCNTATATATCTTCTNTATTCTCNCTTN  
CCTNAANCNNNTNTNNATNTAGNATATCNCTNCTGANCTCCNANTGANTANTACCTCNACNATANC  
ATACTNTGNCNTNANTCTCAATTGCANNGNNTANATCCNNNCNTATGAGAACATCCNACCTNNAAAA  
GTNTTATANTTTGNTATTGTANTGATCNATNTTATAANTNCNNTTTAATNTACTATGATNNNTATCCNTC  
CGTTANGATGANCGNTTNNNTNTCNACTGCGTATNTAGTTCCNAACTNNATNGATNACGTATNNANN  
45 TCACTNTNTGACTGNNNCNTACCTCNTNTNCNCTNNTNTNGNANNGANATGAACNTCGCANTNTTA  
NNTNGCNTTATCACTNTNATCTNAATGTATNTACNACNGNGNGATGTANTAANCTATNTTATNTTTCTA  
TNTATNNTNGATCNATGACANNTNTNGGATNCTAGCNNTNNNNNTNTACCTCNACCGCTCGTTNCTAN  
TNNNCNAACTATNGATNNCATNATTAGNACGTATNTACNTATGNTAANANCNATANGACTNTCATGAT  
CTATTGTATNCATNNNNCANACTGAATNNNANNTNTNTG

NANNNCGANGNNNNNANNTNNNATANATTNNANANANNANNTNTNNNNCNANCCNNCCNTCTNTC  
TNTNNATATGGNATTCTTANGCANCTCNATATNGGAGNGNGGANCGAGGNAACATCTCTNTTTGAGNC  
CTCNAGNGAGTNGNATTACAGTNGNNNTNCTTCTNAAAACTAGCGGATCCCACANGNGTGGNTAGG  
55 ATACACCCNCANGAGGCCCTNNNTGNCCCTTTNAGCACGGTCTNGGGGCCGNGGGGCATCNNGGGNA  
CACAGACGNGGGGGACNTCTATAGCTNACNGCAANANTATNNTNNTAGCANAACCTGTTTAGTCNCNC



ATGGCGNTNACTGNCNNATCACANTCCNATNNNNNANCTTTCTGNTCTNGNTNTTTNNGACNTATANN  
 TTGNNTTTTCGTAATNNTNTNNNNNTNNCNNNNNAGANNGANACNANATNNACTCNNCGCTNTCNTGAC  
 ACCCGANAGTCGATNAANGATAGNATTTTTNTNATACNTNNCGCNTNNTNNGNTCGNANACTTGNTCN  
 5 TNTAGAGTNTNTNCANNNGACTTTTTNTANATANTNAATNTNNNNNTAGTATNGTANANANTCACNCA  
 NGNNACNCCATNANANANNGCNTCNNNTNANTTCNGANNATACATGATANANGTNTCAATTGNTGCT  
 TGANTCTTCTNNATNNNANCNATCGAAGNNTTTNNACTATNNCTTTANANNNCCANNTNTNTCACTTN  
 ANTTNNCNNNNATTAGNNNNNNNNNNATNTGAGNGTAATTNNNATCTNATTATTTNCNATATTNCTTC  
 NANCTNCTNNNANTNTGTNNNANGANGTTGTNNNNNTNNNCAANTCNNANANTNCCTTTTNTATTNNC  
 ATANTNATGNTGNCCAATCNTNNNACCTNAANCACNCNCTTATTNNCNTNCNGCTATGCTNCNACNTC  
 10 TANTNACTATANNACGTATCNTNCTTTNNTCGCCNCNTACNCCNTATATATCTTCNTATTCTCNNCTTN  
 CCTNAANCNNNNNTNNNATNTAGNATATCNCCNTCTGANCCCTCCNANTGANTANTACCTCNACNATANC  
 ATACTNTGNCNTNANTCTCAATTGCANNNGNTANATCCNNNCNTATGAGAACATCCNACCTNAAAA  
 GTNTTATANTTGNTATTGTANTGATCNATNTTATAANTNCNNTTTAATNTACTATGATNNNTATCCNTC  
 CGTTANGATGANCNTTNNNTNTCNNACTGCGTATNTAGTCCNAACTNNATNGATNACGTATNNANN  
 15 TCACTNTNNTGACTGNNNCNTACCTCNTNNTNCNCTNNTNTNGNANNGANATGAACNTCGCANTNTTA  
 NNTNGCNTTATCACTNTNATCTNAATGTATNTACNACNGNGNGATGTANTAANCTATNTTATNTTTCTA  
 TNTATNNTNGATCNATGACANNTNTNGGATNCTAGCNNNTNNNTNTACCTCNNACCGCTCGTTNCTAN  
 TNNNCNAACTATNGATNNCATNATTAGNACGTATNTACNTATGNTAANANCNATANGACTNTCATGAT  
 CTATTGTATNCATNNNNCANACTGAATNNNANNTNTNTG

TTNANAAANNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 GGANNNTGNCTANCNCCCAGAANNNGCTNCANACGNGCGGNTCCGANCCNTACACTTTGGACGGAAN  
 25 TGTNCCAATGANTACNTGGAAGTGTGNACCNCNNCTGCTGNCNCTGTGGANGCNANNCNCANATTT  
 GANGNNTCACTTNACNGGNACTCAAAGCGTGNNGCTGGATCATTTACTGACNTCATCNNGGTGTNN  
 AGGCCATGAAGGNAACAGATTGGGNGNACNCACAGGACCCACAGTCATTGNTGAGAATGAACTCTT  
 GGGAGCCAAGNTTGCCATTGAGGTTGANNCCATTAAGCTGGACCACNTGATTCTCGGACCANNCTA  
 NGGAGGCGGNCAAGTNTCTTGACTTTGANGACCATAATCCTGGAACTTTCAATTTCCATCNAGGAAGN  
 CACCACCGCTGGAGAAGGCTGCCATCTGNACAAAAGGACCTGGTGGNCCANGGGAAGGTGGTCN  
 30 CAATTACGCCAACTCACTTGTGTGATGGAAGTGGTCCCAAGGNCCTATTTTTTTTTTGGCCGATGGTGGA  
 TTGGGGCACCATCAACCTGNGNGAGGAAAANNATTGCATTTTGGTCCAAGGGCCCCCCTCCCTGGAA  
 AANGCTTNTTTTATTAACCAAGGAAGGTTNNCGTTTTTTNAAAANTNCCACNTTATTGGAACCCTGCC  
 ANGNGCAAAGGGCCGGACCCNGACTTTTGAAAGGCAATGGAACCGGGTTTTAAGGGTTGGCCGGG  
 GAANCCCCATTNAAACCNGGNCCTTTNACCAANCCTGGGGGAANGGNGGGCCCCNAAAGGGCTGGG  
 35 NNCCNTTTTTTAAAAAAACCGGGNAAACCGGAANCCTNGGGGGGTTNAAAGAAAAAAAAGNGTCCG  
 GGGGGCANTTGNCCCCNAATTTTTTTTTTGCCCCAGGANA

AAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCGTAG  
 40 GTTCAGNNGGCGCTGAANCGGNNCGTGGGGCTTTTAGGTTCTGTAGCTGGTCGCAATGGCAAGCAAAG  
 GAGGGTACATCGTGCTTGGGCTCCTGTTCTGGCTGTCTCTGCCAACTCGGTACAGCCTGCAGTGCT  
 ACAGCTGTATTAACCAAGTTAACTGCACTTCAATCGTCAATTGTTACATAATCAAGATGCTTGTCTCT  
 TCGTTAAGGCTGTGCCGCTAAAATTTTACCACAGTGTTGGAAGTACGAAGAATGCAGTTTTGAGTTC  
 ATTGCAAAAAGCCTTAGGGGAGAAGGAGCTCCACTATGACTGCTGCCAGAAGAACCTGTGTAACAAAA  
 45 GTGGCGGGAGGAGCGTATCCGANAAAGATACTGCTGCTGCTCACCCTGCTGCTGGAGGCAGTCTGCCAC  
 TTTTATCGCTAAATCTATGCCAGGAGGGCTTCTCCTGAATATCCTGTTCTATCTATTCTTCCCTCGGGG  
 GATGCTGGGTTCCAAANGCTTTTTATTTTCCAACCTGGATCCTGGTTAATCNTTTCCTGTGGGANANAC  
 TAAACTAAGCTTGACCCTGAATAATAGAGGAAGCTCAAAAAGACTNTGAANACCATNCTTTTGGA  
 NAAAAAAGTGGTTGAATTGAAAAAGTTAAAAAANGAACCGGGGTNANTTGAGTGANAAGACANGGTC  
 50 NTACTTTGCCCTTTGGGGGGGCAACNTTCAAGGACCACTTGANGGACTTGTTTTTCAATNCTTAAAC  
 GTTTCCTTTGGGTNCCNGGGAAGGAAATAANGGGGAACAANCCTTTTTTNGGGGAAGTGGGGCCAG  
 GGGGGTTCNTTTTTTAAAAAANTTTTTTTNNAA

TNNNAAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 55 GAATTCGGCACGAGGCTGGACTACGGAAAGCGACTGGCGGAGGCCAGCAATTAGAAACTCTGGGTTC



TGGGTGCAAAAACCGAGTTAGGAGGCTCAGGCATGCTGCGTCCCAAGGCTTTGACCCAGGTGCTAAGC  
CAGGCCAACACTGGAGGTGTTTCAGAGCACCCTGCTGCTGAATAACGAAGGATCTCTGTTGGCCTACTC  
CGGCTATGGGGATACAGACGCCCGGGTCACCGCGGCCATCGCCAGTAACATCTGGGCGGCCTACGACC  
GGAACGGAAACCAAGCGTTTAAATGAAGACAATCTCAAATTCATCCTCATGGACTGCATGGAGGGCCGT  
5 GTANCCATCACGAGAGTGGCCAACCTGCTACTGTGCATGTATGCCAAGGAGACCGTTGGNTTCGGAAT  
GCTCAAGGCCAAGGCCCAGGCCCTTGGTGCAGTATTTTGGAGGAGCCTCTCACCCAAGTAGCAGCATCA  
TAATGGGCGTTGGTGGAAACCTGGGATTCAANAAGAATGAGATGACCATGTGGTNAGGGCACGGCTTC  
CCCGGGGAAAACCTTCCTGGACTTGTGCAAGAAAAATTGGAGTGGGGGGGACTTTGTTCTTNCCAANA  
ATAAACTTCAACTGCTGTCTCAAANNN  
10 NNTTTNGGGGGGGGGGGCCCGCCCCCCTTTTTTCTTTTNNNTNNGGGGGGNNNNNNNNNTTNANNNN  
NN  
NN  
NN

TTNANNCTATCTGGAGCTNCANCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
ANTTGTGANGNNNACATTGAGCTNGCNAAGCGACTTCAGGGGCATCTTTAGGAGTCAGNACTATGGCA  
GAAGACATCCAGGCCAAAATCAAGAACTACCAGACTGCTCCTTTTGACAGCCGCTTCCCCAACCAGAA  
CCAGACCAGGAAGTCTGGCAGAACTACCTGGACTTCCACCGCTGTGAGAAGGCAATGACCGCTAAA  
20 GGAGGTGATGTCTCCGTGTGTGAATGGTACCGCGGTGTGTACAAGTCCCTCTGCCCCATATCCTGGGTG  
TCAACTTGGGACGATCGCCGGGCAGAAGGCACGTTTCTGGGAAGATCTGAACTGGCTCCATCCCACC  
TCTCCTGTCTCCTCCGTCTTCTCCCCAGGGTGGTGAAGGGGGACCGGGGTACATGGTGTATCCCCACCCT  
GGGATCCTGACTCATGGTATAACTAATAATAATGCTCGTTGGAAACGTGAAAAAAAAAAAAAAAAAA  
AATTTNGGGGGGGGGCCCGGGACCCAAATTCCTCCTTATNGNGNNNCTTTNTTAAANNNNNNCCCGAT  
25 GGGNGGNATGNNNNNCANCACTANCTNTGTNAAGGNNNTNTCCNNTTGCNNNCTTTTNNCANGGNT  
NNNNCCNTTNCATNNANAAACCTTNAATNTNTTTCNNNNCNNNNCNNNNNNNNNTTNNNNNTNNAAN  
NNNCNNNTTCTTNTTNNNNNGGNNNNGGNNNTNNNGNNCNCNANCNNNNNNNTTTNANNNNNNNN  
NANNNNNNTTTNNNGNTTNNNCNNNNNNNCCNNNNNNAANNNNNNCNTNTNANAACCNNGNNNNNA  
ANGNCNNNCCNNAANNGTTTNAANCTTTTNAANNAANNNNGNNNANNTTNNNNNCCCNNNNNN  
30 NTTNNNANNGNANAANAANNTNNNNNGG

GCCNATNTGGAGCTNCATCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
CGGCACGAGGAGCTGAGAGTTTCGAGAGCTACGGGACCCCAAAGACAGGGCTGGGCCCTGGCACCCCTG  
35 CGCGCCCCGACCCAACACTTAGGCCAGACCATGGGAACCCAAAAGCCTCGGATACTGCCCTGGCTGAT  
ATCTCAGCTGGACCGAGGGGAGTTGGAGGGCGTGGCCTGGCTGGGCGAGAGCCGCACGCGTTTCCGC  
ATCCCTTGAAGACACGGCTTGCAGCAGGATGCCAGCAGGAGGATTTCCGCATCTTCCAGGCCTGGGC  
TGTAGCCAGTGGTGCCTATACTCCTGGGAAGGATAAGCCCGACCTGCCGACCTGGAAGAGGAATTTCC  
GGTCTGCCCTGAACCGGAAGGAAGTGTTCGTTTACGCGAGGACCACAGCAAGGACTCCCAAGACCC  
40 ACACAAAATCTATGATTTGTGAAGTCAAGGAGTCAGGGACATCCCTGAGCCAGATACCTCTCAAGACA  
ATGGCAGACACAATACCTCTGATACCCAGGAAGACACTCTGGAGAAGTTACTGAGTGACATGGACTTG  
AGCCAGGAGGGCCCTCGAATCTGACTATGGCCTCTGAGAAGCCCCCTCAATTCTTTGCAGAGTCCCG  
ACTCAAGACATCCCTTGCTCTTTGCCAAACTCGGGACTCTTCTGAAAACCCCTTGAACAGCTGTTGG  
CAAACGANGAAGATTGGGAGTTCGAGGGGACTGCTTTTTACCGGGGCTTGNCAAATCTTTCCANCAAN  
45 ACTGTTTTCTGCCCTGGGGGCTGNNGNTTGGGNGGGATNANAAGCAGGGGACAGGATCTTGCTGGG  
CAANCTTATACNAATTGCCGACCCCTGGANGTNCCTTGACAGAAAAANAACGNANAANAATAACNT  
GNCAACGTGGTGCTTAACTGCTNNGGCGGGGGGCTTGGCCTTGTGGCNG

NNCAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGTT  
ANGTTNAGTCTGTATTGGACAAATAAGCACTATGCTTTTCAAATGATTGGAATCATTTTTATTTC  
CTCCTTTTTTTGACAGTGGTTTACTTTTTGTTTGTAAAGTAAAAATCACTAAACTTGTGCAATGGTAG  
CATGGAAATTATCTGAGGTGTCTTGTATGATNGTGCTTTGGCCAGGGTGGACATAGTTCAAATTGTAA  
55 NAGCTGAAGATAAAAGAGGAAGAAGGTATAGGTTTATGCTGCCTATTTANAAGAGAACTTTTATTCTT  
CAGAGCTACATAACATGATAATGCCACTGATTATAAGGGGTTTAAATTAATTCTATGGGGTAGGACA



CCTCTNATNNCCCNTNTTTTGNNGGGGAGGAAAGGACCCNTTTTNTANANAGGGCCCTTGTTANACCC  
 TTGTGGATNNTTTTGCCCTGCNTTAACNNNGNGGGTTNTTTTCCGCCCCNNATGAACNTGGGTANTACTT  
 TNNNAAAATTAAANANNGGNTTTTTTTTNAANNAACCCCCCCCCNGNAANNTGNTNGGNNNGGNNTG  
 GCCCNCCNNNNANAAAAANATTTGTN

5

GCCTATANNGAGTTGNATTACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGNAGGAAAT  
 TCGGCACGAGGCCCTGGTGCCCTTTAGCACGGGCTTGGGGCCGTGTCGCAACAGGGGCACACAGTGT  
 GGGGGACATCAAAGCGCCGNAACCATGGCCTTGCAAACCGTTCGCCCCGCNTGGGGTCTGGGGN  
 10 ACCCCCCGCCNNTGGNAGCNCNTGNTCNTGNTTTTTTGCNTNGGTNGGGTTNNACNTTCNAGGNCCNA  
 GGNTGNAAACNNNGGAANNGGTTTTTTTNAACNTAAANNGNNCANNNNANNTNGNGGAAACNTGTCTTGG  
 NANAAGCNTNACNTNACNGTCTTCTTCCCAAGGGCCNNGGGGGNACNAAAAAAAAAAGGCNTGCCCCC  
 NGGGGNGGAAGGCCAAATTGGNGAATAAAAACTTTTTTTTTATATAAGNATGTGGAACNTGAAGGCTT  
 GTGTGAACGGGNCCTGTTGNGCNCACCCAAATAAAAAANTGNANAACCTGANATTCTTTTCATATANCA  
 15 AGANGTGCATNTTTTAAAGCGNAAANTGTANAANTTATACCCNNAGGGNNNACCCACNNCTTTTATAG  
 AGCNNGAGANNTTTTTTTTTTNTACGNCCCCTGTGGANATATNCACAAGGGAAATGACNNTTCTGTG  
 CACACCGAAAAAATTTTTANAAAAAANCNCCAAAGGNGCGGNGGTGGAANANTCCNCAGGGGTGTT  
 CCTCTNATNNCCCNTNTTTTGNNGGGGAGGAAAGGACCCNTTTTNTANANAGGGCCCTTGTTANACCC  
 TTGTGGATNNTTTTGCCCTGCNTTAACNNNGNGGGTTNTTTTCCGCCCCNNATGAACNTGGGTANTACTT  
 20 TNNNAAAATTAAANANNGGNTTTTTTTTNAANNAACCCCCCCCCNGNAANNTGNTNGGNNNGGNNTG  
 GCCCNCCNNNNANAAAAANATTTGTN

TTNANCNCNATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 25 GAATTCGGCACGAGGCAACGAGCAGGCCATCATCGACGTGCTCACGAAGAGAAGCAACGCACAGCGG  
 CAGCAGATCGCCAAGTCCTTCAAGGCTCAGTTTGGAAGGATCTCATCGAGACCTTGAAGTCGGAGCT  
 GAGTGGCAAGTTTGAGAGGCTCATCATAGCCCTCATGTACCCTCCATACAGATACGAAGCCAAGGAGC  
 TATATGATGCCATGAAGGGCATAGGAACCAAAGGGGTGTCATCATCGAAATTCTGGCTTCTCGGACC  
 AAGAACCAGCTGCAGGAGATAATGAAGGCATACGAGGAAGACTATGGGTCCAACCTGGAAGAACGAC  
 30 ATCAAAGCAGACACCAGCGGCTACCTGGAGAGGATTCTGGTGTGCCTTCTGCAGGCAACAGANATG  
 ACTTGAGTGGGTATGTGGACCCANGATTGGNCCTGCAAGANGCACANGATCTGGACCCAGCGGGTGA  
 AAAAAATCTGNGGGACCGATGAAATGAAAGTTCATTACTNTTCTGGGGACNCCNCANCGCCCCCACC  
 TTGATGANAAAGTGTGTTGANGGAATATTGANAAAAANTGNCCACCCAGAACNNTTNGGGGCCCGCNTCA  
 ANAGGNGANAACCCNTGGGTTCCTTGGAGGAGGNCNTTCTTTACAGGAATGGAAGGGCNCCTGGGA  
 35 ACCTTCCCCGNTNCNTTTGNGGGGCGCCNTTTTNTTTGCCATGAAAGGGAACAGGGACTTTTGGTT  
 GGGGACCCCTGANAAAAAAAATTCGTTTTCCCGGGGGNGGGNATTGGCCTTTAAATNTTTTTCAANN  
 AAATCANTTCNANNAAAAAATTTCCGGGGAAAAACCCCTTNNCNNNTTTGTTTTTTGGGAAAAAAC  
 AANCNGGGGGANATACAAAAAANAGNCCCTTTTTTNAAC

NAAAACTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCTCTG  
 TTCCTAATGTGCATGGGGCTTTGGCCCTCTGGCTATTCCGTGCGCAGCGGCAGCAGCGGCAGCG  
 GGCCGGATCGCCATCCCAGGCCTGGCGGGGGCAGGCAACTCTGTCCTGCTGGTCAGCAATCTCAACCC  
 TGAGAGAGTCCACCCCCAAAGCCTCTTTATTTCTTTTCGGCGTGTATGGAGATGTGCAGCGTGTGAAGG  
 45 TCCTGTTCAACAAGAAGGAGAACGCCCTGGTGCAGATGGCCGATGGGAGCCAGGCACAGCTGGCCAT  
 GAGTCACCTCAATGGGCACAAGCTGCACGGAAAGCCAGTGCGCATACACTTNTCTAAGCACCAGAGC  
 GTGCAGCTGCCCCGCGAGGGCCAAGGAGGACCAGGNCCTGACCAAGGACTATGGAACCTCGCCCTTGCN  
 CCGTTTNAAAAANCTGGCTTCCAAAAAATTCAGAACATCTTCCACCCCTNGGCCANTNTGACTTTTCAA  
 CATCCCGCCCTCTTNTTTGAGGATAACCTCAAAATNTTTTTTCCATAACCGGGGGGAATCGTCAAA  
 50 NGGGTTCAAGGTNTTTTCAAAAAGGANCCGNAAAATGGCGCTTGATNCCAAATGGGCTTAAGNGGAA  
 GAAGGGCATTCAGGAGCTTTTTTGAACCTGGGCCAAACATTGAACCTGGGGGGANAAACCCNCCNC  
 TTGGGGGGNGGTCTTTTTTCAAATTCCCCCATTTTAAGGGCCGNCANCCAGGAAACAAACCTTGG  
 CNGGGGANCCCCGGGGAANNAATTTTCATTTNNTTTTTCNNAANAAAAAANCCCTTTTTNAAAAAG  
 CNCGGTTGAAANNGGACCCTTTNAAAAAACCANAAATTTTNTTTTTTTTAAAAAANAAAAA  
 55 CAANTTTAACCTGGTNTTTTNAAAAAAANAAAAATTTAAAT

NAAAACTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCTCTG  
 TTCCTAATGTGCATGGGGCTTTGGCCCTCTGGCTATTCCGTCGGCAGCGGCAGCAGCAGCGGCAGCG  
 GGCCGATCGCCATCCCAGGCTGGCGGGGGCAGGCAACTCTGTCTGCTGGTCAGCAATCTCAACCC  
 5 TGAGAGAGTCAACCCCCAAAGCCTCTTTATTCTTTTCGGCGTGTATGGAGATGTGCAGCGTGTGAAGG  
 TCCTGTTCAACAAGAAGGAGAACGCCCTGGTGCAGATGGCCGATGGGAGCCAGGCACAGCTGGCCAT  
 GAGTCACTCAATGGGCACAAGCTGCACGGAAAGCCAGTGGCATACTTNTCTAAGCACCAGAGC  
 GTGCAGCTGCCCCGCGAGGGCCAAGGAGGACCAGGNTGACCAAGGACTATGGAACCTCGCCCTTGCN  
 CCGTTTNAAAAANCTGGCTTCCAAAAACTTCCAGAACATCTTCCACCCTNNGGCCANTNTGACTTTTCAA  
 10 CATCCCGCCCTCCTTNTTTTGGAGATAACCTCAAAATNTTTTTTCCATAACCGGGGGGAATCGTCAAA  
 NGGGTTCAAGGTTNTTTCAAAAAGGANCCGNAAAATGGCGCTTGATNCCAAATGGGCTTAAGNGGAA  
 GAAGGGCATTCCAGGGACTTTTTTGAACCTGGGCCAAACATTGAACTTGGGGGGANAAACCCNCCCNC  
 TTGGGGGGNGGTCTTTTTTCCAAATTTCCCCATTTTAAGGGCCGNCANCCAGGAAACAAACCTTGG  
 CNGGGGANNNCCCGGGGAANNAAATTTTCATTNTNTTTTNCNNAANAAAAAANCCCCCTTTTTNAAAAAG  
 15 CNCGGTTGAAANNGGACCCTTNAANAAACCCAANAAATTTTNTTTTTTTTTTAAAAAANAAAAA  
 CAANTTTAACCTGGTNTTTNAAAAAANAAAAATTAAT

AAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGATTCTG  
 20 GCACGAGGCCAGTTTCCAGTTGTGTACCAAGGATGATTGCTTCAGTGTAAATATTCAGCCTCCTGTTGG  
 AGAACTGCTTTTACCTGTGGCCATGTGAGAGAAAGATTTTAAGAAGGAGCAAGGCATGCTCTCTGGAA  
 TGAATGAACTTCCACCACGATTATGCTGCCCCACAGAATTTTGCTTCCTCTGTGATCCTTCAGAAGA  
 TAGTAAATGTAGCCAATGTGGGTGTAGTCCCTTCTGGACAAGATAATATACACAGGTTTGCAGCTAAA  
 ACTGTGCACAGTGGGTCAATTGATGCTAGTCACAGTGGAACTGAAGGAAGGCTCTACAGCGCAGCTTAT  
 25 CATAAAGTGTGAGAAAGTGTGATTGGTTCTGTTCTGCTGCGAGAGCTGAAGCCTGTCTGTCCCAGG  
 GGTAACTGCTTACATCTGGACTTCAGAATCTGGCACACAACACAAGTCCCTGGCATCCACTGCTGCT  
 GCCTTTTCAATTAATAATAGCCCTTCCATCTGGCAGTGGGGGAAGAAGACACTCTTGACATTCTTGGC  
 TCTGCTTTAAAAANGCTGGGGTATTCTATCGNGAATGCAATACTTTTCCCCCTTTCACCTTTGCTAA  
 CCAAAGAACATACATTTTGTGCTGNCAGGTATCTCAACTTCTTAAATCCATTTGGCATTTTCTTNTGGCC  
 30 TGNTACNTNTTTTNGGCCCTTCGNGGGTNCCTTTNCTTGGTNTNAANCCNATGGANNGGACCAGGA  
 AACCGGGAANCCCTTGGGNTTTTTTGGGANAAAAANTTTTNCNTTTTCCGCGAGTAANGCCAAAAANTTA  
 NCCCTAAAAAATANNNGACCCTGGAACNTTTTNCNNTTGGNNTTTAAAAAANNGGGGGNGTGGT  
 TNT

AAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTCTG  
 35 GCACGAGGCAAAATGGTTGCCGGGTTATGTAAATTGGGAAGAAGAACAGTCCGGAGGAAGAAGCTGA  
 ACTAANNAAGCTGAANGATTTGGAGAAATCTGTGGAGAAGATAGCTGACCAGCTGGAAGAAGTGAAT  
 AAAGACCTTGCTGGAATCCAGCAGGGTTTTCTGGCCAAGGATTTGCAAGCTGAAGCTCTCTGCAAACT  
 40 CGATAGGAGAGTAAAAGCTACAATTGAGCAGTTTATGAAGATCTTGGAGGAGATTGACACACTAATTC  
 TGCCAGAAAATTTCAAAGACAGTAGAATGAAAAGGAAGGGTTTGGTGAAGAAGGATTCAGGCCTTCCT  
 AGCCGAGTGTGACACAGTGGAAACAGAACATCTGCCAGGAGACAGAGCGACTGCAGTCCACAACTTG  
 GCCCTTGCTGACTGAGGTGAGGCGGAGAAGGCCCGTGTGCTGCACTGAAGAACAGCCCCACCAGCCCTG  
 CCATCTCTGGAACAGAAAGTTACCTGCCTTCCCCAGCGCTTGTGGGAGCAATTGGCCCCGTGCTTTTC  
 45 CTTCTCTTACAACCACTCTCAATGAACAAGTGTATTCCTTCCAATCTTTAACCTTCTATCAGCTTCTC  
 GTTCTGGCTCTGGGGGATCTGNGCTTGTCCANCANCCCCNCNTTGTGTTGGGANAGGGCCCCATGACCA  
 AGTCTTTCCAAGTGGNTTGGANCCCTTTGGGGGCTTTTNTTNGGCCTGGGGAAAACCTTNTTATGTATCC  
 CGNGGAAGTTCTGAANTTTATTGGNCCNTTTTGGGCCTTCAAAAACCAAAAAGGNCCTTTTGGTTTT  
 TATGAAACCCCTTAAANCCCTGGNTTGGGT

GNAGNGCNNNNCTTNTCTTTNNANTTNNNNCTTNNNCCNCCNCCNCCNCCNCTTNTCTTNNCCTCA  
 CCTCNCCTCCACCCGNCNANGGNNNGNNTATNTTNTTNNCTCTTANAGCCCNNTANGAGTCGCAT  
 ACANGGNNNNCCNTCNCATCTTTTCCCTCTTTTCGCACNCNACCTTCTCNCNCTTTCTTNTNTAANN  
 55 TATTNCTTNNCTCNCACCTCTCNCNCTTNNNNNNNNNGNNGNNGTTTCNATGTTNCAATTNNNN  
 TTAGTNNCCANANNNTCNCATCCANCANTCNCNTCCATTNTTNAANACGNTNTCCCTTNTTNTTNTNT



5 TGGAGGCCNCATAGGGGAGTCGTCATTACAGGGGGGNGGNCNCTCNAGNAACGAGTGGGGATNTCNC  
TAGNGGTTGGATGCATNCTCCCGATCTTTNGNGTTTTNNNTATNCTANGNTCCANNAGAANNCTTNC  
NAGNCGGGGGAATTTATATACTAGTAGTTTACANNACGNCCACNCNCTCGTCAGACTCGNNTTCNC  
GCTGTNCNNTANTTTNCTNANNCTCNACANGANANTNGNNGTNGTTGTGCCNNTAGATTNNTATCT  
10 NTAGAGNGNNGACNTGATGNCATGAGAGNCGGCTAGAAGTNAGCGAGGNGCGANANGTTNCANTTTA  
NGCNNNCACGATGNACNANTNANCNAGANCNCGNAGANGANGCGNANNNGAAGTNGANNCGACTTC  
NGAGTTNGNAGGGGNGNNGNNGATGNTNCNGNNCTATGNTCCTCGTGGGNCNCGNGAGNGNATC  
GTGNTNNGNNTATGNTTNGNGANTCNCGAACGTNAGANNATNANNANCANGTGNTTAGACGGGTCA  
GAGNNCNCNAGATGATAANTNANGNNTCCGGANNANTNCGGATATNANNNTATNTNNTTNT  
15 GAANACTATATCTGNCCNTGCTCGNNANNCTGTNCGNNCGATCANGTTGNGAGACCNTNTANN  
GCTGTATTGGGNTTNTNNTNNGAGNNCNTNNNNCCCTAGGGGAAGNNTAGGNATNTATCNGAGNN  
NNNANAANTCNNNGNTGNNTNACAATNTNACNTNAGANNANNNNTNANNCCACGATNNCGTTCG  
AGNNTNCNNGNNNTGTATCNAGNCNNNNNTTTTAGNNNNNTCGCNTTGTTCGNNGCNNNGNNNCNN  
GNGGNGGNGGCTNTNCNNACACGNGGNNNTCTCTCATNTATNNGTTTTCCNTCTTTTANCANCTCTNA  
20 ATCCNCNGANCCTTTATANCTCTNNCTNGTTACCNCGCATNANNNGCGNTCTATTTGGATCTCGANGA  
GNTCGNATAGTACNTNNCACGTNCCCANGCNTNTGNANGGNNNNNGCNATNNTCGGNATNANNCG  
AACTNTNTATCNATNANACTGTNGAGAGAGCATAGNNNGNTNCATGNTNTCTGNANAANTTNTTN  
NCTGANTNNGANCGTACNTANNNGNGNGTAGTTANNNACNATGNANCNTANTANNNTTTATANCGT  
GAAAGATGTNGNACGNAGTNGGAANATNAGAGTANTANCTCGNNNGNTGGGTGANTTACNNTNGGAT  
25 NCNTGNANGGCGANANNATGNCGNNCGTATGNNNTGTATTATCGNTCGTNNATGGGATATCGNNAC  
GCNCGGTANTACGTTNNTATAGTACNCTNTTCNNNGAGNNCTTNCGTCNNGGNGCAGACGNAANTG  
ANGAGGNANCCG

30 TGGAGGCCNCATAGGGGAGTCGTCATTACAGGGGGGNGGNCNCTCNAGNAACGAGTGGGGATNTCNC  
TAGNGGTTGGATGCATNCTCCCGATCTTTNGNGTTTTNNNTATNCTANGNTCCANNAGAANNCTTNC  
NAGNCGGGGGAATTTATATACTAGTAGTTTACANNACGNCCACNCNCTCGTCAGACTCGNNTTCNC  
GCTGTNCNNTANTTTNCTNANNCTCNACANGANANTNGNNGTNGTTGTGCCNNTAGATTNNTATCT  
35 NTAGAGNGNNGACNTGATGNCATGAGAGNCGGCTAGAAGTNAGCGAGGNGCGANANGTTNCANTTTA  
NGCNNNCACGATGNACNANTNANCNAGANCNCGNAGANGANGCGNANNNGAAGTNGANNCGACTTC  
NGAGTTNGNAGGGGNGNNGNNGATGNTNCNGNNCTATGNTCCTCGTGGGNCNCGNGAGNGNATC  
GTGNTNNGNNTATGNTTNGNGANTCNCGAACGTNAGANNATNANNANCANGTGNTTAGACGGGTCA  
GAGNNCNCNAGATGATAANTNANGNNTCCGGANNANTNCGGATATNANNNTATNTNNTTNT  
40 GAANACTATATCTGNCCNTGCTCGNNANNCTGTNCGNNCGATCANGTTGNGAGACCNTNTANN  
GCTGTATTGGGNTTNTNNTNNGAGNNCNTNNNNCCCTAGGGGAAGNNTAGGNATNTATCNGAGNN  
NNNANAANTCNNNGNTGNNTNACAATNTNACNTNAGANNANNNNTNANNCCACGATNNCGTTCG  
AGNNTNCNNGNNNTGTATCNAGNCNNNNNTTTTAGNNNNNTCGCNTTGTTCGNNGCNNNGNNNCNN  
GNGGNGGNGGCTNTNCNNACACGNGGNNNTCTCTCATNTATNNGTTTTCCNTCTTTTANCANCTCTNA  
45 ATCCNCNGANCCTTTATANCTCTNNCTNGTTACCNCGCATNANNNGCGNTCTATTTGGATCTCGANGA  
GNTCGNATAGTACNTNNCACGTNCCCANGCNTNTGNANGGNNNNNGCNATNNTCGGNATNANNCG  
AACTNTNTATCNATNANACTGTNGAGAGAGCATAGNNNGNTNCATGNTNTCTGNANAANTTNTTN  
NCTGANTNNGANCGTACNTANNNGNGNGTAGTTANNNACNATGNANCNTANTANNNTTTATANCGT  
GAAAGATGTNGNACGNAGTNGGAANATNAGAGTANTANCTCGNNNGNTGGGTGANTTACNNTNGGAT  
50 NCNTGNANGGCGANANNATGNCGNNCGTATGNNNTGTATTATCGNTCGTNNATGGGATATCGNNAC  
GCNCGGTANTACGTTNNTATAGTACNCTNTTCNNNGAGNNCTTNCGTCNNGGNGCAGACGNAANTG  
ANGAGGNANCCG

55 TNNANNANNNTCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GAATTCGGCACGAGGGCANGACCACGAGGANAGAAGGCTGCACCATCTGANGACCCTGCANGGTGAG  
AGAATAGANCATTACAAGGCNNTGGAANAAGCACTNAACTCGCCGATCCTTTGTCTGGGGCCGAGAT  
GGNAGGTGGAGCCTCAGGAAGCCTCCAGAGCTGTTACACAGANGGATGCTGGCGCANNAGAAAAAG  
TTCCTGGCTCAGTTCACCACGCACCAGCGGACTCGCCGTGACACGCGGAAACNGAAAGGCGAGGGTC  
ATGGACCATCTGGAAGCCAGCTTGAGACCCANCTACAGGAAGCTGAACAGAACTNCATCTGAAATCT  
TGGCAGCATTGGCCCCGGGTACCTCTTGCCGAAAGCTAACTATTTTCGAGTAAACGTGGTCTCTCAGCA  
GAGAACCCCTGAGGACTAAANGGGAACNAAGCCTTCTACCCCGATGAGAGAGGGGACACTTGGGGN



TCCCCAGGATGATGACCCTGCCTTGGGGGGCCCCACGTTTCAGGATCGCTCAACAAAAGGCTGATGCCA  
GCAAGAAAAGTGAAGTTGGTGATGGCTANAAATTCCATAAATATGCTTANAAANAAGAAGCCATCTGT  
AACTTTAAGGCTTGCTCAAGACANGNCCTTGAAGACCCGGGCTTNTNTTGAAGNCCACNTTGCCCT  
TCCCCAGGANGAATTTGCCNCCCCAAGGTANGGGGGACAAATGGGGGTCNTTTCCTTTTTGCCC  
5 CCCCAGGCTTTGTGCCAGGGCTTGGGAAAAATGGGTGGCCAAAATTNCCCAACCAAAAGGNTTTAAA  
AAATTANGGGNGGANCCCTTCTTGCTTTTGAAAAATGACCAAGCTTNCCCCGGGGTTNGGGAAAAACC  
ATTNTTTTNAAGGNTTTTGGCNTCCCCCGGGTTTTTNNAAAAACC

10 NCNACTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCTCGAG  
TTTTTTTTTTTTNTTTTTNGGGTCCCNNGNCCNANGNNTTNGGGGNTTTNCCCAGGTTNAAAAANG  
GGGGTTTTTTGGGNACCNCTTNGNNTTCCAANNNNNACGGGCCCCCCCCNNNNAANCCCNTGGNNG  
GGGGGGGGGNGGNNNCCCNANNCNGGNCNGGGNTNNTNAAAAGGCCNCCNCCNNAAAAAAANCC  
15 NTTTTNGGGGTNNNCCNGGGGGGCNAAANTNNTTAAANCCCNTTNNAAAAAANTTTNGTNNNGAAA  
NGGAANNNNCCNGGGTTNNNTTNNAAANGGCCCCCCCCCGGNCCNTTNAAAAANTTNNTNNTNNT  
AAAAANAAANCCCCNNAANNNNGGGGGNGGCCNAAANCCNTTNNNNNCCCNAAAAANNNNNNT  
GAAACCCCNCCCCACTTANCCAAATTTTTCCNNNTTAAAGGNNAAACCGGANAAAAATTTGGGAATTT  
TNGNGCCCNCCGAAANTNNTTTCGGANGGGGAAGGGGAAAAACCTTTGGGGGGNGGGGTTTTTTTT  
20 GGGGCCCCNATTNGGGTTTAGGAAAAANTTTTTNTTCCCTGGAANGGCCCTTTTTNNAGGCCCCGN  
ACCNTTTTTAANGGGNNGGGGCCCAATTTTTANAAAAAANNANTTNGGGTNAACCNTTTGAA  
ACCNCAAAATTTTCCCCCTTTGGGGAANNCTTTTTTAAANGGGCNCNCCCNCTTNCANAAAAAATT  
TNGGGCTTTTTTTTTTGGGGAATTCCTTTANNGGGNTNTTTTGGGAAAAAANAANTNTCCCAT  
TTNCCCAAAAGGGAAAAAAGNCCCCCNGGGGGGAATTTNNCNAANTTTNGGGGGGGGGNGG  
25 NNAAAAAACNGGNGTTAANGAGGGG

30 NAAAACTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
CGGCACGAGGGCGGTACCCCTCGGTTCCAGGCACCGACCGGGCTAGCGGCAACATCGCGTCCATGGC  
CACCACGGCGGCTCCGTCATCTTTGGCCCTCAGGGCCTCGAGCCCGGCCGCGACCCCCAGTTTCGTACG  
GGGTCTTCTGCAAGGGGCTTTCCCGCACCTGCTCGCCTTCTTCGAGCTGGCCTGGCAGCTGCGCATGA  
ACTTCCCGTATTTCTACATCGCGGGCTCCGTCGTTCTCAACATCCGCTTGCAGGTACATTTTTAGAGCC  
CTGGGGATGCCGCCGGCGTTCCGGGCCTGCGTTGTGGCCGACTCCAGGAGGCGCCGCGGCACCGTGG  
35 AGCTTGGGGCGAGCAGTCCCCTGTCTCGCGAGAGTGCTTGGTCTCCCTCCACCGGTGCGCTCTCGCCT  
CTCCGNCGTCTGCTCTTCTCCGATCCCCTGAACTGGCACCGAAAACCTCCTGAGTGTANGAAGANGA  
AATACGCGATTNCCGGGAACCGAGAACTTCAGTTAAAAACCCCACTACAATATTTAAAGAAGCTGTG  
CATTCCTTTAAAAACGGGAACGAAACAGGATGTANTTATAACAANGGGAAAGGCTGGTCCAAACTT  
TTAAGGACAAGAAATGNACAAACCTTAANGGGCCGTATTTATNNAAATAGGAAAANTTTCCGGGAAN  
AATGAAAACCTGGGATTNTTAAACCGGGGATCAGTCCNNAANCCCTGGAANAATTTTAANGGGAATTTG  
40 CCGNGGGAANGGNNAAAAANTTTTTTTTTNTTCCCCAAACCGGAAAAACTTTTTGACGAATTCNNA  
AANNTTTAGGGGAAAAAANAANNTTTTGGGGGGGGGGGGCCGGGNCNCCAAATTN  
CCNTTNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNA

45 NAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGATTC  
GGCACGAGGCCAGTTTCCAGTTGTGTACCAAGGATGATTGCTTCAGTGTTAATATTCAGCCTCCTGTTG  
GAGAACTGCTTTTACCTGTGGCCATGTCAGAGAAAGATTTAAGAAGGAGCAAGGCATGCTCTTGGA  
ATGAATGAACTTCCACCACGATTATTGCTGCCCCACAGAAATTTGCTTCTCTGTGATCCTTCAGAAG  
ATAGTAAATGTAGCCAATGTGGGTGTAGTCCCTCTGGACAAGATAATATACACAGGTTTGCAGCTAA  
AACTGTGCACAGTGGGTCAATGATGCTAGTCACAGTGAAGTGAAGGAAGGCTCTACAGCGCAGCTTA  
50 TCATAAACACTGAGAAGACTGTGATNGTTCTGTTCTGCTGCCGAGAGCTGAAGCCTGTCTGTCCCA  
CGGGTAACCTGCTTACATCTTGACTTCAGAATCTGCACACAACACAAGTCCCTGGCATCCACTGCTGC  
TGCTTTTCATTTATAATAATAAGCCCTTCCATCTGGCAGTGGGGGAAANAANAACTCTTGACATTCTT  
GGCTCCTGCTTTAAAAAGGCTGGGGNGNATCTTATCGGGAATGCCATACTTTTCCCCCTTTTCCNTTTG  
CTAACCCAAANAACATACATTTTGCTTGGCAAGTTATCTTCAACTTNCCTAAATCCANTTTGGCANTTT  
55 TCTNTGGGCCCNNGGTACNTTNTTTTNGGNCCCTTNGGGGGTCCCTTNCCTNGGTTNAACAATGGATG





5 AAANANCATCCNCNTATCNNCCTNTTAATNNTAANGATTTNNNTATNCNCTTNNCGNCTGTCNNTTCA  
 ACNNNTCNATTNCTTTANNCCNCCANNGCNCNCANNANGNATNNTNTNTTATNTCNTTCANNNGNC  
 TATCAATCNTNAANNAGTATAATTANTNTNTNACNNCTNCCNNACATGCCNCNTANTAANCNANTNT  
 NACCATCCATCTCCCCATNTGNNATTCTTCAAGCTNCCNANNNNGCCTCNANNANTCTANNNNCGANC  
 NATAGCNCNTCGCTNTACNNTCCNCTTATCANTGCCTCNTACTNANNNGCCCTNNCNNNTNNGNTAA  
 NATNTCNGNCACTNCTNANAACNNNTCNTAACANGAGATCTCAANNATCAANCNNATGNATGCAGNT  
 CNTTANTCTGNTNGANACNCTNANANCNTCACCGATTATNNCGGNTNTCNATCANTATATNAGCCAG  
 ANTNCACNCANNAACNCNNATANC GTTAAATAGCATNTCACTNNNATGACNATATCTCTTAGTNANN  
 10 NTGACTCTANCTATCTNTCTNNTTACNGNTNCNTNNTNTCTNCNNNATNCGGACTCGATNNACTNAN  
 ACTCNNNNCTCACGTNNACAATNNAGCCG

15 TGAGGCCNNNTAGTGNNGTCTGATTACNGGGGCGGCCGCTNTATAACTAGTGGATCCCCCGGGCTGCA  
 GGAAATAACTCTGAGNGGTTTGCCCTTAACTTCTNCAATGNATGANAGTGAAAAATNTAGTTGCTTAG  
 CCGCTCANNCGTGNTACAACTCTTCGGNGACACCATGANCTATANCCCAACAGGCTCCTCCGTCCATG  
 GGACTGAANAATCCTGNAGTTTANACCATGAAGAGGCACTNNGGGACAAGCTNNGTATCTNTGGNCT  
 GATNAAANGACCATGCGNAAGTGACTNTGGAAGTGGNTCNGNCCAATNGCTTCCTGATGCTTGCCANN  
 NTCCNNCCTNNTCTNGNTTGGATANTCTCNGNTGAGGAATCANCCCAGTNTTGCNCTCCTTGCGCTTGN  
 TACTNGCACNATGAGANATNAGACCCTANATTGGNTTGACCNAGATCCGTNNGNAACACANNTNGA  
 20 CNTTGAAGAACNTGGGNCANCAGACCNAGCNNTTGANNCCANCTTGGCACCANTGNTTGGACNNGAA  
 NCCATGTGGACCAGCTGCCCCNAAGTCTTNNCTCACCTTAAATTCCTGCAACATAAAAAANTGNTTC  
 GGTNCNNNNCNACTTGACTNTTTGGNNNNCCCGTNTGTGTTATTCNANCAANTAAACTCCTTNNCAGA  
 ANTTACCTNTTNTGGCGGNGNNGGNAAGTNGGGNNTAGTCTTNNNTTCATNGTTATTTTNTCTTNCNTT  
 25 NNTTTTANTCNNTTTANCGANTNANATCCNCCNTTNTTNTTTTNGGNTNTANAGANNNTACANTNTC  
 NTNNNNCGATTNTTCCNCCGNTTATTTNNTNCCNCTANNTNGGAANGNCCCGNNCGTANATCCTC  
 TACNCTNCTTTNNNCTTTNTTNTCTNTGNGTGNAANANCCCNCCNGAAATTNCTTTTATAGCCGGCACTCN  
 NNTTNACTCNACTTTTANNTTCATNTNNAACNCNTCGGNNATANNNTGANATTNTCTCGCTGTNTNA  
 AACNTGTNTCTCTCTNACATTNGTNGTTCNNNCG

30 TGAGGCCNNNTAGTGNNGTCTGATTACNGGGGCGGCCGCTNTATAACTAGTGGATCCCCCGGGCTGCA  
 GGAAATAACTCTGAGNGGTTTGCCCTTAACTTCTNCAATGNATGANAGTGAAAAATNTAGTTGCTTAG  
 CCGCTCANNCGTGNTACAACTCTTCGGNGACACCATGANCTATANCCCAACAGGCTCCTCCGTCCATG  
 GGACTGAANAATCCTGNAGTTTANACCATGAAGAGGCACTNNGGGACAAGCTNNGTATCTNTGGNCT  
 35 GATNAAANGACCATGCGNAAGTGACTNTGGAAGTGGNTCNGNCCAATNGCTTCCTGATGCTTGCCANN  
 NTCCNNCCTNNTCTNGNTTGGATANTCTCNGNTGAGGAATCANCCCAGTNTTGCNCTCCTTGCGCTTGN  
 TACTNGCACNATGAGANATNAGACCCTANATTGGNTTGACCNAGATCCGTNNGNAACACANNTNGA  
 CNTTGAAGAACNTGGGNCANCAGACCNAGCNNTTGANNCCANCTTGGCACCANTGNTTGGACNNGAA  
 NCCATGTGGACCAGCTGCCCCNAAGTCTTNNCTCACCTTAAATTCCTGCAACATAAAAAANTGNTTC  
 40 GGTNCNNNNCNACTTGACTNTTTGGNNNNCCCGTNTGTGTTATTCNANCAANTAAACTCCTTNNCAGA  
 ANTTACCTNTTNTGGCGGNGNNGGNAAGTNGGGNNTAGTCTTNNNTTCATNGTTATTTTNTCTTNCNTT  
 NNATTTTANTCNNTTTANCGANTNANATCCNCCNTTNTTNTTTTNGGNTNTANAGANNNTACANTNTC  
 NTNNNNCGATTNTTCCNCCGNTTATTTNNTNCCNCTANNTNGGAANGNCCCGNNCGTANATCCTC  
 TACNCTNCTTTNNNCTTTNTTNTCTNTGNGTGNAANANCCCNCCNGAAATTNCTTTTATAGCCGGCACTCN  
 45 NNTTNACTCNACTTTTANNTTCATNTNNAACNCNTCGGNNATANNNTGANATTNTCTCGCTGTNTNA  
 AACNTGTNTCTCTCTNACATTNGTNGTTCNNNCG

50 TNNNNAAANNCTGGAGCTCCACCGCGGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
 GGAATTCGGCACGAGGATATTCGCCTCCTGGCCATAGTCCGCGCCGCTTTGACCAGCGGATGAAGAC  
 GTGGCAGCGCTGGCAGGATGCTCAGACCACCTGCAGAAGAAGCGGGAGGCTGAGGCTCGGCTGCTG  
 TGGGCCAACAAGCCGGACAAGCTGCAGCAGGCCAAGGATGAGATTGTAGAGTGGGAGTCTCGGGTGA  
 CTCAGTATGAAAGGGACTTTGAAAGGATTTCAACTGTGGTCCGAAAAGAAGTGATAACNGGTTGAGAA  
 AGAGAAATNCANGGACTTCAGAAACCACGTGATCCAGTACCTCGAGACACTCCTGCACTCACAGCAA  
 55 CAGCTGGCTAAGTACTGGGAAGCCTTCTTTCTGANGCAAANGCCATCTTCTAATGGACCGANGACAC  
 CAAAGCCACCTGCCTGACGCTGCCTTTTATACACTGGCCTTCANCTTTGNCGGGGCCAGNGATGCATT

CTGGCTAACCTGGANTTAACCCNTTNCCTTTCTGGCCCCACGAACGGGCTTTGCCCAAGTNTNTTTTAAAC  
CGGTACNTTACTTAACCTTTCATATATATTTTTCTTACCTGAAAGGAANAANTTTTTTGGTTTTAAACCAA  
AAATNCCTNTACTTAGGGGGGGGNAATAANGGGGAAGGGGGGGGGGNTTTGGGTTTTAAATTTTT  
5 TTAATCCCCAATGGTTTTTTTTTTTAAAGGAATGNGGGTTAGGNAACTNNGGGGANAAACCTTTTTT  
TNTTACNTCCCTGACCGGGGGCCCTTGAAAAAAATTTTTTAAANAAAAAACCTTTTTAAAAACNGG  
GGGNAANNNNNNNNNNNNNNNNAACCTTNGGGGGGGGGGGCCCCGGGGCCCCCAAATTTNCC  
CTTTTANGGGGGGNNNNNTNNNNNANNNNNNNNNNNNNNNNC

10 ANAAAACTGGACTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTC  
GGCAGAGGGGGCGTNGCTGCTCCTTGCGCTGTGCGCCGCAAGCGCCCGGGGGCTTTATTTCCACATCG  
GCGAGACCGAAAAGCGCTGCTTCATCGAAGAAATCCCCGACGAGACCATGGTCATCGGGAACCTACCG  
CACCCAAATGTGGGATAAGCAGAAGGAGGTCTTCTGCCCCGACCGCCCTGGGCATGCACGTGG  
15 AGGTGAAGGACCCTGAAGGCAAGGTGGTGCTCTCCCGGCAGTACGGCTCAGAGGGGCCGCTTCACCTTC  
ACTTCCACACTCCTGGTGACCATCAGATTTGCCTGCACTCCAACCTCTACCAGGATGGCTCTCTTTGCT  
GGCGGCAGACTGCGTGTGCACCTAGACATCCAGGTTGGGGAGCATACCAACAACCTACCCTGAGATTGC  
TGCCAAGGATAAGCTGACGGAGCTACAGCTCCGAGCCCCGCCAGCTGCTTGATCAAGGTGGAGCAGAT  
CCAGAAGGAGCANGGATTACCAAAGGGTTTCGNGAANAGCGCTTCCGTCTGATCAAGTGAGAGCNCC  
AACCAGAGGGTCTGNGGGGGGNCCATCGNTCAAACCTGTCATNCTTNATCCTTCACTGGCATNTGGGC  
20 ANATGCGTCACCTTAAANANCTTTNTTTGAAGGCCCAANAAAGCTGGGNGTAATGGTCCCTCACCAG  
TGAATCCTTTTCTTGGCACCTNANNTTANTTTGGGGACNTTCCCCNCCCAATATTNTTATCCCCCT  
GGGATTTNTGGANGGGNAAAAAAAAGNGGAAAAAAGGAATTTTNNCCCCCTTTGGTTTCCCTTG  
GGCAACCNAAAACATTTTCAAANTCANCCCCNTTGGTTAAACCCTTGGGNTTTTTAAAGGGAACCCA  
GGGNAAACTTGGGTCCCAGGGNTTTTAAAAAA

25 TNNNNNCANCTGGAGCTCCACCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GAATTCGGCAGCAGGAATCTTTATTTTTAAAGCAAAGATCTGAAAAGTTCCATAAAAAGTAGTATCTTC  
TAATCAATGATTCATTATTAGCAGATTATATTTACTCCAACCTAATTATCCAATCAGTAGTATACTTTGA  
30 TATATACATCATACTGTGACCTGTAGACATTTAAAAATACCTTTGATTTCAACCATGCGTAAAAAAG  
TAATAATATAACTCCACAAACGTTGCTCTGGAGTACAACGTACACCTCCTGTGTCAGACTGACACCAA  
CCTTCCACTCACCTGTTGGTACATGTTCCCACCATGATTTCCACACCCTCCTCTCTGAGCCTTCTTCTC  
TTCTCATTGCTTTGAGAAGTTCAGAGTTGTACTTCTCAAGTCTGTGGTAGTAGTTTTGTGGTAGGGCTTT  
AATAGCATAGTAAAGATTAGGCAGGGTCAAAGTACTCGGTTATGCCTTCTGATTTTGAGAATACATTG  
35 AGATTCTTTATGCCATCTCATTGCGNGCAGAACGGGGCCTCTCATAAATTTTTTGTTTTATTAATTTAA  
AGAAAACTACAGTAGAAAATGTTGGCAAGCCAATTATATAACCAGGGGTATTTATTACTGGGTAAAGG  
GCTTTGGACAGTAAACCATGGGTCTGGGTCTGGCACATGTGTTGGCANAANGGGGATAGCAACTATC  
ANTTCGCAATTCTACCANTTTTTTNTTTTNTCGGGGNTTTTTTAAACCATAAAGTAAACTTGGCCCAAT  
CAAGAAAAAATNTTTTATGGAAAACCTGGTNCCTACCTNCCCCNTGGGGAAAAAATAAATCCTTAN  
40 GAAGGCCTCCTNNTNCAAAGGTTTAAACAAAAGCTTCCNTTTTTTTTTTGCCTTTTTTAAAAACN

AACAANACTGGAGCTCCACCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
TTCGGNACGAGGCCAGTTTTTCAGTTGTGTACCAAGGATGATTGCTTCAGNGGNAATATTNAGNCTTCN  
45 NCTACCTANNNCATANAANTTTNATNANANNGNAANTANACAATTTGANAAGGANNAATTGAATTA  
GTTAATTNNNATNANAGNNTTNTTTCANCATNATGCATTGTNCANNNCATAATNTTTTNGTACTTATAA  
TGATANTNTCATNATAATNGNTNAAANTNNGNANGATGCANAAGNGNGNTGAATTCNNTNNNCNAAN  
GGANTNGTAGAGACNTTTNNNTANAATATNANNNTGNCATAANTNCTCNNNNTANTNATNNACNNT  
GNTANTANTTGAATGGTTATTANTGGTGNCTTTNTTGTAAAGNCAAATGNAAATAAATNTTNTCATTT  
50 GTTCTGNTNTATNTCTGNTANAGACTTNNNTGTGTNNATATTAAANNACATNANATATNTTTTTTTN  
NTTGCNCCCCCCCCCCTAATTGTTAACAATATNTTNAGTNTNGATTTTNTNTNATNCTAACNCT  
NTTANATNTATANAATAAATAGNTNAAAGNNANTNTNTTTTTTNNAGAGNTNNNGNCTNAAAGANAGTT  
TTGGNTCANTTGGGNNNAGATANTGNTATTNGNGANNNGANTCACAGTCTTNGGATNNGTTATNAN  
ATNTTTANANANATTCTTTATTGTNATTAATANGANANTAGANAANTTTGATNCGTTAANTTTANTCGT  
55 NNCACNATTNATTAGTGTNATNATATNNNATNTNAGTGNGNTATTANNTATNTNGAANTANTAGNAAA  
TANTTGANNNTNNGNNTACGANNTNATNANCANTTTTATNNTGNTTGTAGACANTATGTGTATTTAAT



CTTCATCGCTANNGTNTCCACNNTANGGGCCNGTNTGNATNATCGTCGTTNATCNTTTNCCGCNTGNC  
 NCNTTCCTCTCNTTTNTTATCNTNTTNTNTCCTACACNCGCTTACGCCNNGCNCGCTCENNCTCNTNCTCC  
 TCTANTNGCTTCCGNTTCGCGGCTCTTCGCGGNACCNCCTTCNGGCCCTNCTNTCTTTATNTCTTAATCT  
 TATTCAANCNACGNTNNCCGTTNNTNTCNCCTNNTTTTNTANTTCNTCANNCGNTCCGGCNCNCGCNC  
 5 TTTACTNTCTCTTNCCCCGCACNNANTCCTGCNTCCCGCNCNATNTCATTANTTGCNTNCATCCNNNCN  
 ACTNTNTGTCCTCTCNNTTCTNNCACCNNGTATCCTTTANANCNNCTCNCNCGCTCTCNTCNTCN  
 CNCTNGNTCTCTNCTACTNTNCTCNTCTTCTCGNNTNTCTTNTACCTNTNTGCACTCCANTNTNGNAT  
 NTATACNTNCTATTGCCTNCTTGTACTNNTTTCTNCCNCCTNNTNCCCGCANATCNACCTNTTCTNTAT  
 10 CNTNACTCNCNNNATCTTCTNNAACNCNCNAANCTCTNNTNCGTGTACTCGCATNTACCTNNNNCNC  
 CCNATNCTCNGGTTACNNTACTATGNGNCTCTCCATTTCCNNCTANGNNTCTNCTNACTCTNTCTT  
 CNNCGTCCG

TTGAGCCCNATAGNGAGTCGTATTACAGTGGCGGCCGCTCTAGAAGTAGTGGATCCCCGGGGCTGCAG  
 15 GCAANCAACACTGNATGGGTNCCCNTTNCCTTGCCNANTGTNTGACAGCGANGAATNATTGTNCTTAA  
 TNGGNCAGNGNGCCNNCAANNGCNGNNNTCAACNTTAANTACAGGGNCANTANNACTTCAAAGNN  
 CCNTNGCANNCNCAAAANCCCNGCACCTTATAACCCCGANGGAGTNACNNCCNNACNTGCNGTGGNCN  
 NATAGCTCTGGANCCANGGTGAGNCCTNGGCCNAAGGAGGGCTTTAGATCNNNNGGGGACCAANTG  
 TGCNNGGATCNCCTGGGACACGGCTCGCACCCCTTACCTTAGANTGGAGNGTCTTATCATTTNANGNG  
 20 AGTATTGNANATAGAAGCTCTNNTTGTGCCAGATCNANGGCACATATNCTNNTATTTATCCTCNAGA  
 NGNGNTGNCTCTTTNCNAATGNGGGGAACTNGAGNTNACTCNGGNTACANTNGNACNTNAGNCCCA  
 CGTANNCGCACACCNNGGGNGAANACAATNTTANGGACACACANANTANACTTNTNTTGGGNACNN  
 CNNGNCTGGNNTNANGNNNANTAAANANGATNGNTTGTCTNAACTCNTACAAANTAANNAANGTNTCN  
 TNGGGGGACCNNTNANGTNCNTTTNCCAAANTGTCTNNNTGAGAAAANTCAANCTNTTCCCCATAA  
 25 NNNCCANNTTTNCCCTCTNATNANACNCTTTTGGTNTTAANGGGANCCCCCTCCNATCANNATGGGGNA  
 CCANCNGTNTNANGNCNNTGGNCNCGNNNNCCNTNNNNCANNAGACCAANACNNNCNTNCAATGG  
 CAAANNNGTTACATGNTNTNTTCTANCTCTCTNACNTTNTCANTGGGNTCNTTACCNGTTTNNNNAN  
 CTCNTAGCACNTTNCATGTNTNTTCTANNANGNTANACACNANNAANNTNNNTTCTNNTTNAATTNNGN  
 GGANGCNTACANAATNCGGTTCCCTANNTNNAANNTCNATANAATTCTNACCNNCCANCTANNTA  
 30 TTNTTNCGAANTNTCTACGANTNANGANGNANCGACCG

TTGAGCCCNATAGNGAGTCGTATTACAGTGGCGGCCGCTCTAGAAGTAGTGGATCCCCGGGGCTGCAG  
 35 GCAANCAACACTGNATGGGTNCCCNTTNCCTTGCCNANTGTNTGACAGCGANGAATNATTGTNCTTAA  
 TNGGNCAGNGNGCCNNCAANNGCNGNNNTCAACNTTAANTACAGGGNCANTANNACTTCAAAGNN  
 CCNTNGCANNCNCAAAANCCCNGCACCTTATAACCCCGANGGAGTNACNNCCNNACNTGCNGTGGNCN  
 NATAGCTCTGGANCCANGGTGAGNCCTNGGCCNAAGGAGGGCTTTAGATCNNNNGGGGACCAANTG  
 TGCNNGGATCNCCTGGGACACGGCTCGCACCCCTTACCTTAGANTGGAGNGTCTTATCATTTNANGNG  
 40 AGTATTGNANATAGAAGCTCTNNTTGTGCCAGATCNANGGCACATATNCTNNTATTTATCCTCNAGA  
 NGNGNTGNCTCTTTNCNAATGNGGGGAACTNGAGNTNACTCNGGNTACANTNGNACNTNAGNCCCA  
 CGTANNCGCACACCNNGGGNGAANACAATNTTANGGACACACANANTANACTTNTNTTGGGNACNN  
 CNNGNCTGGNNTNANGNNNANTAAANANGATNGNTTGTCTNAACTCNTACAAANTAANNAANGTNTCN  
 TNGGGGGACCNNTNANGTNCNTTTNCCAAANTGTCTNNNTGAGAAAANTCAANCTNTTCCCCATAA  
 45 NNNCCANNTTTNCCCTCTNATNANACNCTTTTGGTNTTAANGGGANCCCCCTCCNATCANNATGGGGNA  
 CCANCNGTNTNANGNCNNTGGNCNCGNNNNCCNTNNNNCANNAGACCAANACNNNCNTNCAATGG  
 CAAANNNGTTACATGNTNTNTTCTANCTCTCTNACNTTNTCANTGGGNTCNTTACCNGTTTNNNNAN  
 CTCNTAGCACNTTNCATGTNTNTTCTANNANGNTANACACNANNAANNTNNNTTCTNNTTNAATTNNGN  
 GGANGCNTACANAATNCGGTTCCCTANNTNNAANNTCNATANAATTCTNACCNNCCANCTANNTA  
 50 TTNTTNCGAANTNTCTACGANTNANGANGNANCGACCG

NAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAAGTAGTGGATCCCCGGGGCTGCAGGAATT  
 CGGCACGAGGCCCAAGTTTTTTTTTTTTTNAATCCCAGGCTTTTTNGAATGGAAAACATTNGGGGGCT  
 55 TTTACTGANGGTTNTTAAAATANTCATNATAGNANCTGGATNNGTAANCNCTTTTTTCTTTTAAAGN  
 NCNTTCAANNCCCCAAAACNAANCTNGNCTNTCCGTTTTTTTTTNAAGNANAGNNGTGNTTNCNNGN  
 NCCAAAACCAAANNGNTAATTTAANTTTNNTTTTTAAAACTTTNNAANTTACNANAAGNNANTGNAA

5 AAAANCCCTTTGNTTGGCCTTTAAAAANCTNCGNTTTTTTNAANCCCNCCNATTTTNAANGAANNNN  
 NNCTGNANTAANAAAAANCCCNAGGNNNGNTNNGTTNCCAAAATNNTTTTTNNCTGGNCGGGTTNTTTA  
 AANGGNAAACCGGGGAAAAAAGNCCGTTTNCCTGGTTNNNTGGGNCCCACTNNNTGCTAAAAANNA  
 GNCCCTTGGGGNAATTAACGGGACTGGTTGGCATTNGTGGGAGGGGAGGAAAAACNTTTTTTTGCC  
 10 AANGAAAGGAAGGCCCAAAAACCCNTGGAAANTTTTAAANTTTTCCNANGGCCCGGAANCAAAA  
 CCCNCCNTTTTAANCCCCCGNTTTTTTNCCTCAANGGGGGATTCTNAAATNTTTTTTCNGGAAACCC  
 CCTTTGGGGGGTTNCAAAAGGAAAGGNNGGGGANNCCCCCNGGGGGTTTGGGGTCCCCCCCCC  
 CCCTTTTNAAAAGNCCCAAGGAANCCCTTTTTTTTTTNCCTCNGGGCCCTTTAAAAAAGGG  
 CCCCTTTNCCCCCCCCGNNGGCCCCNTCAANGGGGNGGGGGGGGGGGCCCCCAGGAAAAA  
 15 AAAAGGGNTTTAAAAAANGGGCCTTTTTTCCCCCTNNGGGGGGNC

15 TTGANCACAATCTGGAGCTCCACCNCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GAATNCNNCACNAGGCCCANCGNNNCTGTNNNCCNNANGGCTGNGCCTTTGGGGAACCTGGAANCNT  
 NNTGGGCNTTNNACNNANGNGGNANTNACTCATATNCNANNNATGACTGGNANCGNCCANNNTTNT  
 NACNNTTNNCNAACATCTGNGCTCCTNTAACTCACCNNGGNGCTNNCGGTTNTTTTTGNATNNAAC  
 GNTGGAGAANNCGTANGCCNACCAANCATAACNNTTNAACCCANNNTTTTTGAAANNTATNCATNAACC  
 TTTGTCNTTANAAANNNTGACTTTTTGTGNACNTTNAANAATNACNACNTGCTGTNATGNCNNATATNT  
 20 TCAAACTATGGGCTATGNGANTANTTCAAGCNCNCCCGNGAATTCTTCNTGAATGTGGTNNCCACCC  
 GCCTAAGANATGATGNAGGGGNANCGGGNAAAAATNATCATANTCNGCAGNGTNAGAGAGGGGCC  
 NTTGGGTAAAATANTAATAAGAACCNTTGNTCCNTTATCCCCAGCCGACTNTNNTTTTTNTTTGGAGCA  
 GAGAAAAAATNTTTTTTANNGCANNTCTGGTGGGGGGGGACCCCANCCCCCTTGAAGGGAATG  
 TCATTNNTTANACGNAANNNCNNCCCACTTNCCTTTTTTAAACCCCNNTTTGTTCTTCCCTTNNAA  
 25 AGGNNNGGNGANCCTTAAAGTTTTTGGGGGANCAACCTTTTCATTGGGGCTTAAAAAAGGGAGGNTT  
 GGGGTGTCCCAANCNAAGGGCNCGGACNCCCCCNCTTTAAAAACATTNNAAAANGGACCCCGGT  
 TTTNTNCNNTGCCAAGTTAAACNTTAANNNTTTTTGNTCCNCGGTTTCCACAAAAAGGGGGGGGG  
 GGNTNACCNTCNCNNTGAAANAAAGGGTTTTTANAAAAGGNGTCTTAATTTCCCTTTCNNNG

30 TTGNAANAACAANCTGGAGCTCCACCNCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGC  
 AGGCANCAACCTCTAGAANTNACCGTTCCTGCCNCANGCTTCCAACACAGCGNGGGTCTCTCCTACTG  
 CTGGAGGNTCTGCCCTCCACATCCTCATTCTCATCTGCTNTNCNTGGCCACTNTGGACAAGTNTCTGG  
 TGGACTNTACCCGGCANGGNGTCNCTGANTCTNTGGTTCGACTGCNNNTGGANTAGTGACNNCANAAC  
 GTNGTCCTTCNATAACTNCACANACATCGGTTNGNTGTACACAGTACACCTCCTGNNTCAGATTGNCC  
 35 NCATCCTNTNACTCNCNTGCTNNANCNTGTTTCATNCCANAANTTTNNNNCNTTCCTCTANGAGNCNTA  
 NTTCTNTNCTCATGTGCTTTTGACAAGTTTCAGAGCCNGTACTTCTGAAGTCTANNGGTANTACTTATCG  
 TAGGNCCATTTCTTTNTAACATAATNCTNGATNAACCCGCCCTTCAGGAGGGGGGCANGGTTTANGN  
 TACTGGCTATCANCCATGACNCCGGGTGGNGACTTTNTCCNTNCGCCNCTGGACCANGGGGGNATNAT  
 NNGACNCTCNCNCCNATGNAGNAATTCNNGGAAGTTATGGAACCTGTNCCNTAACCTNTNGAATNCC  
 40 NAANANCGAATTNCNAGGNCNNTTTNTTTTACACCNCGGANANCCNCCCNACCCGTTTNTCTNNTTT  
 TTTTTTTTTTNAAAAACAAATANTTAAATTTGNCTTCNCCCNTCCGAAAAAATANNATN  
 TTTTGGCNCGCCCCCCCCCCCCNTCCGTTCNCGTCTTNTTNGGGGTNTATTTNCCNANCANNCNCANT  
 CNTCNTNAATTTCACTCNAATCTCTTTNTTTTAAANCNTTTTATTCNCCNTTNTTGTTCNGCTNTAAC  
 45 CANNANTNAANTNTCTCTTTCTNNTNTCNGNTTACTTATACTGAACATNCATCNTTNGGGGGTNNCT  
 TTCTNTTCNCCANACNT

50 NACAAAACCTGGAGCTCCACCNCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAA  
 TTCGGCACGAGGCTCCTCTCCAGCCTCCACCATGTCCATCAGGGTGACCCAGAAGTCTACAAGGTGT  
 CTACCTCTGCCCCAGGTCTTCAGCAGCCGCTCCTACACCAGTGGGCCCCGGTCCCGCATCAGCTCCT  
 CGGCCTTTCCCGAGTGGGCAGCAGCAGCTTTCGCGCGGCCCTGGGCACCGGCATGAGCATGGCT  
 GGAAGCTACGGTGGGGCCCCAGGTTTGGGGGGCATCACAGCTGTCACCGTGAACCAGAGCCTGCTGA  
 GCCCCTCAAGCTGGAGGTGGATCCCAACATCCAGGCCGTCCGCACCCAGGAGAAGGAGCAGATCAA  
 55 GACCCTCAACAACAAATTTGCTCCTTCATCGACAAGGTGCGGCACCTGGAGCAGCAGAACAAAGGTTC  
 TGGAGACCAATGGAACCTCCTGCAGCAGCAGAAAGCTGCCCGAGCAATATAGACAACATGTTTGA  
 GAGCTACATTAACAACCTCCGTGGCAGGCTGGAACTCTGGCCCANGAGAAGCTGAACTGGAAGTG







CTTCGGNGCNCNNCCCCGCCNCTCCNCTCNCNCTCTNCTTCAGTCCCGTTNCCNGCCGCCANAAGA  
 NGCNGTGAGCNCCTNCTCNCCTCTNCCNCTCNGTNNCCTTATGCTCNTTNNCCTNCCNTANCNNCCNC  
 GCGNNGNNGNCCGACNANNACTNTTTTACANTNNCNGANTTTCCGNGAGGNANNNCTCACTNCCN  
 NTCCNNNTCTNCGCCGNGCTCTTNCNCCGNCNTATNCCNCGCNCNTTCCATGCTCCGCNCTACCCGCG  
 5 CGCTNCACCCATCCGNNNGCNCNCTCGCCGNCNCCCTCGTCGNCNCTCCCGNCGNCGCTTNTNTNTNC  
 CNCTNTCCNCTNCGCGACGTNCGNCTNNTGCGTCCACGCTCTGACCGCTCTCTTACNNGTGCGCGCN  
 CANNGCGCACATNACGGGTCCAGNGCCTAGTNCGNGCNTNCGCNCNTCTNCCGCGCNCGTACACNA  
 CGGCGCNCNCTCTTANNCCTNANCCGCTACGTTNGCGCCCTCTNCGTTCGCCNCTTACTCGTCCCG

TTTNAGCCTATANGGAGNNGNATNACAGTGCGGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GAAANAAACACTGGAGTGGGTGGCCATTTCTTCTCCAATGCATGAAAGTGAAAAATAAAGTTGCTTA  
 TCCGTTTCCGCGNGTCCAACTNTNGNCNACNCCNTNANTTNTANCCCNCCAGGNTCNTCCGTCCNTGG  
 AANNNAANTNCNNGCNGTANTCCNNTNAAAAGGNCCCCNGNCCANNCTTNGANTNTGGTNNNNAN  
 15 NAAAGNACAAGGNGNANNNNNCNTTAANNTCNTTTNNACNANNGCNTCNNNNNNNTGGNANCNTCN  
 ACCTTNANTGGTTGGAATCNTTTAAGTTAAGNATTAANCCAANCTNGTTTTCTTNGGCNTGGAAACGG  
 CACATGAGAAATAAAACCCCTTAATGNGGGGANACCAATCCATGTGTGGAACCACTGTGACATAGAAA  
 NTCTGGCACACACACCAGCATGANAAACCCANTGNGGCANNNTGTNANACAAANNCTGTGCCCATGTG  
 CCCNCACTCNCACCNATGNNNATTTNGCACAAAAAAGGGNGTGTNAACCCCNNTGATTTGGGGGG  
 20 NCTNGGTATACACCANTANNTCTTNNNACAAANNATATTTTGGTGGNGAAGNGNACAGGGGGTTTCTT  
 ATATAATGGTGNAATTTTTCGAAGAATTAATACCGNTGAATNGGNGAATAAAATNTTATGNGTTTTAT  
 TAAAAAATAAAAAAAAAAACNCCCGNGGANATATTTACCANCNTTTTTTTTTTTTCCCCAAAAAGG  
 GGCCCCCNCNNGNNTTTTNAAAAAANNTTTACCCTCNTTTTTTGGAAAAAACNCCNAAAAAACCC  
 CGTTTNGGNGGAATNTTNGGGGGGGTTAACCTTNGGNAAAAAATAAATTCNAAAAAAGNGNTTN  
 25 NNNGCGGGNAAAAAACCTTTTCCAAAAAAGGNNGAAAN

TTTNAGCCTATANGGAGNNGNATNACAGTGCGGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GAAANAAACACTGGAGTGGGTGGCCATTTCTTCTCCAATGCATGAAAGTGAAAAATAAAGTTGCTTA  
 TCCGTTTCCGCGNGTCCAACTNTNGNCNACNCCNTNANTTNTANCCCNCCAGGNTCNTCCGTCCNTGG  
 AANNNAANTNCNNGCNGTANTCCNNTNAAAAGGNCCCCNGNCCANNCTTNGANTNTGGTNNNNAN  
 NAAAGNACAAGGNGNANNNNNCNTTAANNTCNTTTNNACNANNGCNTCNNNNNNNTGGNANCNTCN  
 ACCTTNANTGGTTGGAATCNTTTAAGTTAAGNATTAANCCAANCTNGTTTTCTTNGGCNTGGAAACGG  
 CACATGAGAAATAAAACCCCTTAATGNGGGGANACCAATCCATGTGTGGAACCACTGTGACATAGAAA  
 35 NTCTGGCACACACACCAGCATGANAAACCCANTGNGGCANNNTGTNANACAAANNCTGTGCCCATGTG  
 CCCNCACTCNCACCNATGNNNATTTNGCACAAAAAAGGGNGTGTNAACCCCNNTGATTTGGGGGG  
 NCTNGGTATACACCANTANNTCTTNNNACAAANNATATTTTGGTGGNGAAGNGNACAGGGGGTTTCTT  
 ATATAATGGTGNAATTTTTCGAAGAATTAATACCGNTGAATNGGNGAATAAAATNTTATGNGTTTTAT  
 TAAAAAATAAAAAAAAAAACNCCCGNGGANATATTTACCANCNTTTTTTTTTTTTCCCCAAAAAGG  
 40 GGCCCCCNCNNGNNTTTTNAAAAAANNTTTACCCTCNTTTTTTGGAAAAAACNCCNAAAAAACCC  
 CGTTTNGGNGGAATNTTNGGGGGGGTTAACCTTNGGNAAAAAATAAATTCNAAAAAAGNGNTTN  
 NNNGCGGGNAAAAAACCTTTTCCAAAAAAGGNNGAAAN

CAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
 CGGCACGAGGGCCAGACGAGCGAAGGCAGGAACCGTGGNCGTCCGTTTTTTTCGTTGGCCCCGCNAAN  
 NCCNNTTTNNNGCAANNANGGNCACCGTCCNTAAANCCCGCAGGNNTTTNTGTANAAGGNGNGGAAG  
 GCTTCAACCTNNCAANGGNGCCAGTTTANNAGGGCCAAAANTNCCTTGTTTNCAGGNAAGGAG  
 CNTTTTGNTCGGAANCAAGNGGTTNCGGNGGCCAACCCAANCCATTTTCCGGAGAAAGGTTAAACC  
 50 CCCCCAAAAGATCGGCTTAAACTTGATNCCCTGAGCCCCACTNGNAAATCCAAAAGGTGCTTGCCNT  
 TTAAGAGNGCCAGCNTTTTGTACTTTGAGGAAATAAAAAAANAANGGCCAGTGATTCNNNTCTTAG  
 CTTTGGATTCTTTTTCTTNTGTTTTGAGAAAAAATGGTTGAAGTNCCAAAAAANTGCCTGGATGG  
 GAATTAATACCCGCGATTTTTCTACTTAAAAAATAAAAAAAAAAACTTGGGGGGGGGCCCGGGCC  
 CCAATTNCCCCTTTGGGGGGGNNNTTANNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
 55 NNN  
 NNN



5 GCCNTATNTGGAGCTNNATNNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCTT  
CTCTGGTCTCCNGGTCCCCCGGCCCTCCCGGCTCTCCTGGTGAGCAAGGTCCTTCCGGAGCCTCTGGT  
CCTGCTGGTCCCCGCGGTCCCCCTGGCTCTGCTGGTTCTCCCGGCAAAGATGGACTCAATGGTCTCCCA  
GGCCCCATCGGTCCCCCTGGGCCTCGAGGTGCGACTGGTGTGCTGGTCTCTCCCGGCCCT  
CCTGGACCCCCCTGGTCCCCAGGTCTCCAGCGGGCGGCTACGACTTGAGCTTCTGCCCCAGCCACCT  
CAAGAGAAGGCTCACGATGGTGGCCGCTACTACCGGGCTGATGATGCCAATGTGGTCCGTGACCGTGA  
CCTCGAGGTGGACACCACCTCAAGAGCCTGAGCCAGCAGATCGAGAACATCCGGAGCCCTGAAGGC  
AGCCCCGAAGAACCCCGCCCGCACCTGCCGTGACCTCAAGATGTGCCACTCTGACTGGAAGAGCGGA  
GAATACTGGATTGACCCCAACCAAGGCTGCAACCTGGATGCCATTAAGGTCTTCTGCAACATGGGAAA  
10 CCGGTGAGACCTGTGTATACCCCACTCAGCCAGCGTGGCCCAAGAAGAACTGGTATATCAGCAAGAA  
CCCCAAGGAAAAAGAGGCACGTCTGGGACCGGCGNAGACATGACCCGGCGGATTTCANTTTTCAATAT  
GGCGGGCAGGGGTCCGATCCTTGGCGAATGTGGCCATTCAACNTGANCTTTTCTTGCCTTGAATG  
TTCAACCGAAGGCCTCCCCAAAAAATTTACCCCTACCACTTGNAAGNAACAAAGNNNGGCCCTAAATT  
GGACCAACAANACTNNGCAANCTTTAAANAAGGGCCTNGTTTCTTCCAGGGGTTCACCGNAAANTC  
15 AAAAACCGGGCCGAGGGCAANAAGCCCGNTTTTAACCTTAAGGGTTAACCTAANNANGGGTTGACNN  
AATCNNT

20 TTTAAGNCCTATAGTGNNGTCGTATTACAGNNGGCGGCCGCTCTAGAACTAGNNGGATCCCCCGGCTT  
GCAGNAATTNGGNACGAGGCTTTTTTCCGCCTGGNTATCCGAATGGGCCCCTGCTTTATATCACTNT  
GCNTAGGGGTTCNGATGACNTGGCAAACCCCCCTTGTTTTNTGGGGCCNTGATNACATNAAGANTTTN  
NTNGNCAAAANCCTTGNNNTNAGNNANNTTGGACCGGGACACAAANAGGNGCNNTNGNANNCGGG  
NGNGTNNTTCCCNACNNGGNTATAGGNNNGTGCCATCANNTTNCCCTATATTNCACCTTANCNT  
NNGCTCTNNAANAANATGTNCNNGGGGTCTANATTTTTNTNAAAAGGGGCACTTNTACCCCTCTCA  
25 CTTTTGNCTTTTACACCAGNGNCAANNGNANGAACCTCTTCCCCNTCTNAANAAAGNTGGNCNTNT  
NTCNTNTNNTNCTTGTGCCNAAGGNGGGGAAANANGNTTATTTCNNGGNCNCNCCAAAANCCTTNA  
AAAAAANGNGGGGGNCTNTTCTNTTTNNANNGTNTTNCGNGNGAGAAACNTATGTCCCCTAGAANT  
ATTACTNGANANGGANNTNCTNNANNTCAGCTCNTNCAANNCTNGTTAANANNGTGGNNAGAAANTA  
NANATNCCCTAGGGNCNTANCCANGTATGNGATNCANNCTTGNTCTGACTNTCCCNCAANTNACG  
30 GGANNCTNAGAAANNANAANCTNTCGTGNCCCTNGCTCGCGCNNTATTANGNNNTCTANNNNCGGAG  
CCCTCCCNCTNTTTNTCNAGNCGTTCNCTTNTTNTAACTNNACNAACTTTGCTTCNNNANCCCC  
ACCTNTTNTTNTNTTTTATGNCACNCTNNNNGCNATTGNNCTCCACTNGACNTCGNGGAGNCNNNT  
CNNCCCTCCCTTNCNCTNTGACTANCCAGTCNTGAANACTNGCCGCANNCCNCTTTNTTNNNAG  
ATTACCNTNGNNGCNNTTGCTCNCTCCTATATNCNTANGNANTNGNCCNCTAANGACTCCNCT  
35 TANNACANCATNGAGTACGNCAATTTTNAATCTCTCGGATNNCNANTACGNNTATCTTNGTTNCNNCC  
NNTCTNGGGCNACTCNGCCC

40 TGCNNGNGNNNNNGCCANNTCNCCTNNNNNNNTTNNAGNCCNATAGTGGAGGTCGTATTACAAANG  
GANTACACTNCNAAANCGGNGGGGTACCCCNGANNTGCNCTNATNTTCTNCTTTTNTNCTTCTNTTT  
CNCNTNTCNTACGCNTCCTNCNGTGGNTNCTCNGGGGNGCCTNTNCTTCTCNNNCNNCNCNTCACTCCC  
CNNCCTTNNNCNNACCTCTTTNCCTTGNCNGTNCATNTCCCTGTNGTNTTTCATCATTTGNGTCTNCT  
NNCTCCNGNNNGTNNGCNAGCGNNCCGTNNCNTNNCCCTCTNTNTNATNGTTGGNCTCGGCNCGNCN  
GCCNTTGTNTTCTTTNATNTCTGTCNCCCNATGNNTGCNTTNTTNTTNTNTNTATACCGCGNNCC  
45 NCNCCNTNTNTTTTANTNTTTGTNTCCNCCACCGCTNNCTTATATCNNTNNNTGNTCGGCTTTCNN  
NAGNCATNCNATNNNTCTNTCTNCNATNTTCTNNCNTTACTCTAGCNCNNGNNTTNCNCTCTTTTCCTT  
GCNCCCTNCCCGTCNNGTNTTCTTTTNTTNGNNGCGNCTNCCGTNCTNTCCCTNNCTNGNAANTT  
TCTNGCCATNNGNNNANNCNTTTTCTNTGNNNTTGCNNTNNANNCNTTNNNNCTTNTTNGNCTCTA  
NGCGGTNNANANNNGCCNGCNCNTCTGTNGCATTTACCTTTGNTNNGGCCNCGNNGNNTNCTNCTC  
50 NTGNGNNTNCNNNNNCNGNNNGNNGCNCNTTNNNNNGGTTGTGGGNTCCGNNNCNCTNTGT  
TTTTCNNGTNNCNCNTCTTCTATCGNNGNCGTNNATATGNCNCTTNNNTCATTTCTNACCNCCNN  
CNGNCTCNCNTCNCNCTGGTPTTNTCTTNCCTCCNCCNCTCCCTTACCNTCTATTTCTANCNCTTTT  
CCNGTTACCNCGCTTCGNNCTGCANGCAACTCATNNTCNGCNTTATNCTGCTNATTTTCNNCAAGCANT  
NATCNGNGTCTCCNCGGNTTTTNCACNCTTTNTTNTCTNCTATNTNCCCNCTNNNTTCTCATNNNTC  
55 TNGCATNTTTGNTNNCTANTNATGGCCANTNTTANNTNTANTATTTTTTANTGCCTCANNGTATTTNC  
TCACATATTTCTNCTTTTCTGTTTNTCTTCCGCTNGCNNTTAGATCAGCTNCTNTTNTCCTCATNNA



GCGGCCACAACAACCACATGGCCAAGGTGCTGACCCCCGAGCTGTACGCCGAGCTGCGCGCTAAGAG  
 CACTCCGAGCGGCTTCACGGTGGACGACGTCATCCAGACCGGCGTGGACAACCCAGGCCACCCCTATA  
 TCATGACCGTGGGCTGTGTGGCCGGCGATGAGGAGTCGTACGACGTGTTCAAAGAGCTCTTTGACCCC  
 ATCATCGAGGACCGGCACGAGGCTATAAGCCCACCGACGAGCACAAGACCGACCTCAACCCCGACA  
 5 ACCTGCAGGGCGGCGACGACCTGGATCCCAACTACGTGCTGAGCTCGCGGGTGCACGCGGCCGNA  
 CATCCGCGGGNTTTTTGCCTCCCCCGCATTGAAGCCGNGGGGAAGCGCCGGGCCATCGANAAGCTCG  
 CCGTCNAAGCCCTGTCGAGCCTTGGACGGNGAACCTGGGNGGGGANGTACTATGGCGCTTCAAAGC  
 CTTGACGAGGGNGGAGCAACAAGCAAGNTTATCGACNACCACTTTCNTTTTTGAANAAANCCCGNGT  
 CGGCCCTTGGTGGTTGGNTTTTTGGGCATTGGGCCCGGGAANTGGGCCCGAACNCCCGNGGGGATT  
 10 TTNGGNATTNAACGAAAAAATAAAACCCCTTTCTTGGGGGGGGGATNNAACCAANGGANGGGACCAT  
 TTTTGGGGGGGTTATTTTTCCATTGCNAAAANGGGGGGCNAAAATTGNAANGGNGGGNGGTTCAA  
 CNCCTTTTTGGGAAAGGGGCCTTAACCCNAAAATGNNAAAACCCNTTTTN  
  
 15 AAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGANTN  
 CNNCCCTNGGNGACAAACCCGATNTGGCTGANATTGAGANGNCGATAAGTCNAAATTGAAGAANAC  
 GGANACGCAAGAGAAAAATCCACTGCCTTCGAAAGAAACGATTGANAGGAGAAAGCAAGCAGGCGA  
 GTCGTAATGAAGCGTGCGCCGCCAGTATGCACTGTACATTCCACAAGCATTGCCTTCTATTTTACTTC  
 TTTTAGCTGNCNAACTTTGTAAGATGCAAAGAGGTTGGATCGAGTTTAAATGACTGTGCTACCCCTTTT  
 20 CACATCAAAGANTGGAGAACTACTGACANCGTAGGCCGCGCNTGCCTCTCCCATCTGCTTGTGTGGCT  
 GGCAGGGAAGGAAAAGAACTTGCATGTTGGTGAAGGAGGANCTGGNTGNTACNACAGNGAAATCTA  
 CAGTAAAAAGCTGGTCCAAGGTGTTCTGCGGNTGTAAATGCAGTTAATCAGAGTGCCATTTTTTTT  
 TGTGTTCAAATGATTTTANTTNTTGAATGCACATTTTTTTTNTTNTGCAAATAAAAAGTTTAAACCC  
 TGAIAAAAAAAAAAAAAAAAAAAATTTGGGGGGGGGGCNGGGNCCCNATTCCCCCTTNTAGGGGGN  
 25 NNN  
 NNN  
 NNN  
 NNN  
 NNN  
 30 NNN  
 NNN  
 NNN  
 NNN  
 NNN  
 35 TTNNACAAAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
 ATTCGGCACGAGGCCGAGGTGCGACGCGCGAGGCTGCTCTGCCGCGCTGAGATGCGTTACGTTGCCT  
 CCTACTTGTTGGCCGCCCTCGGGGGCAACTCCTCCCCAGCGCCAAGGACATCAAAAAGATCCTGGAC  
 AGCGTGGGCATCGAGGCAGACGATCGGCTCAACAAGGTCATCAGTGAGCTCCACGGAAGAACA  
 TCGAGGACGTCATTGCTCAGGGTATCGGCAAGCTGGCCAGTGTGCCGGCTGGTGGGGCTGTGGCCGTC  
 TCCGCTGCCCCAGGATCGGCAGCACCCGCTGCGGGTTCTGCTCCAGCCGCGAGAGGAGAAGAAGG  
 AGGAGAAGAAGGAAGAGTCGGAGGAGTCAGATGATGACATGGGCTTCGGCTTGTGTTGACTAGAGTCC  
 CGCTCCCCTGCAAATAAAAACCCCTTTTATGTAAAAAIAAAAAAAAAAAAAAAAAAANTNGGGGGGGGGCC  
 40 CGGNCCCCAATTCCCTATGGGNGTTCGNTTNNCANNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
 NNN  
 NNN  
 NNN  
 NNN  
 45 NNN  
 NNNNNNNNN  
  
 50 NNGGNTNANNAATCNTNCAATNCANNNNNNTTTNTTNTTNCNCCCCCNCCACCNCTCTANCTCCATCNC  
 CCCCCNCCCCCCCCNCAANGGGGGGTNACNCGTATGTTCCCCCNCTTTNAGCCNCATTACGAACNN  
 CTCTCNCCNTCTCCATTNCTCACNAATACCTTGTTTNNNTCTTNCCTTTTAAACCNCTCCNNCCTCATCTCT  
 TTTTTCATNTTCATTATCATATCANTNNNTTCNCCNATGAANTGTCACTCTACTCTNCNCACTTNTAA  
 CTTTTTNAACNTNNNNATANCTNNNTANGNTNGCTNANGCCTNANCTNAATGATACNCAANGNTTNAAN  
 NANGTCTANNACNNTNNGGGATANGNNNTGANAGNGNGTTACCNNGNNNGGGGANANNNTTNGN  
 55 NANCTTANTANANCTAGTNTTACTTNTCTAATCTCNCTNNAATCNNACTTGACGNANCCCTNGNAGC  
 TANNNCNGNNNNNANTGTNAGANANGTGGNNNNNGNGNNCANNAGNNNNNACNNAACNATANANG





NCNCNTACTCTCACNNNCTTNTCTCACATCTCTCGATCNNCTNCNCCTCACCGCGCNCCTGCCACGCNNT  
CCTCNGNCCTCTTCTTACCCGCCNTCTACANTCGACTCTTCGCCCCATCTGTCTCNCCTTACCCTCTACT  
CCTACNNTCNTNNCANTGTATCTNCTCACNTNTNNNNNCNTNANATATNNNCTANACTTCCTNTTCCTC  
TCTCTANNCTCTANAGTCCTCTTCTCNTNGCNTCCNACNTCCCTNNNCTCTNCNTGCTCCCATCGAAT  
5 NNNCGNNNTANCAACCCCCGNNNTNATTTCGCG

TTTGAGCCACCATNGGGAGNNGCNTTACAGTGNNGGCCGCTCTAGANCTAGNGGATCCCTCGGGCTGC  
AGGAAATTNCAGCACGAGGNCAATTNTGNTTCACCANCAGCTCTACTGNAGCCNNGGCGATAAAAATT  
10 CGGCCAGGGTTCTCGNTCTTGCCGNCCTCTGCTCCAACCGGCACGGTCTGATCCGGAAATACGGCCTCA  
ATATGTGCCGCCAGTGTTNTCCGCCAGTATGCAAAGGACATCNGNCTTCNTTAAGGTACGCTGGCGNA  
CGCCATGGNCTCCTGTTNCAGGANAGGGNCNACAANCCGGNAGNTCGGCGTCCGNGNTTGATTGAGN  
GCCGTTTCATCTCTTTCAGCTAAGCNGGGCNCCTTNTCTTTGTAAGNCGGACAACAACAGCNGANAGGCT  
CGNCAGNCATCTTAATAGGANTTGAGGGGGANNGTGAAGGCTNTGNAAAANGTAGATNTTCNTAATA  
15 CCTNTTTACCCATNTCTGNNAGNTGTAGGTAGCTATATGTAACNGTAGGATANACNTTNTCTTTNCCGA  
ANTCCNTTNNACATGAAAACNTTAAATCNCCTAATCATATCCTTNGTNAANTTTNNCGNCAAAAATAAC  
NTGCCCTCTGAACCGGCTTGCCCTTGAACNTAACCTGAANNAATGGTCAATGTNCCTCGANCCNTCNA  
NGGGTCTNGAGGGCCCCAGTAANACCCCTTCTTAGGAANNCCNNAACGCCCNNNCCNTTCTAATNATNN  
CTTTATNGACNTCTNNGTCNNANTCGAGTTCACAAGNNTAAANACNTTNTCCCNNGGGNANNAANNC  
20 AACTANNNTGGNTTCNCTTNCAAAACCTANTANNGTCANNGNNTTTTTTGGNCNNNTNNAACGTTCTC  
CTTCNNNGTNNNTNNTNGNTTTTNNNTNTNTANNNCGCNCNAANTAANNTTCCTCANCNNGTGTTTNTT  
CAGAANNAANANATATNGANGCCNCNATCAACTATGCTANTTNNNTNCTCANAANNCACCCCTCATN  
GTNNGAGACNACTACCTNTATTNTTTNTCG

TTTGAGCCACCATNGGGAGNNGCNTTACAGTGNNGGCCGCTCTAGANCTAGNGGATCCCTCGGGCTGC  
AGGAAATTNCAGCACGAGGNCAATTNTGNTTCACCANCAGCTCTACTGNAGCCNNGGCGATAAAAATT  
CGGCCAGGGTTCTCGNTCTTGCCGNCCTCTGCTCCAACCGGCACGGTCTGATCCGGAAATACGGCCTCA  
ATATGTGCCGCCAGTGTTNTCCGCCAGTATGCAAAGGACATCNGNCTTCNTTAAGGTACGCTGGCGNA  
30 CGCCATGGNCTCCTGTTNCAGGANAGGGNCNACAANCCGGNAGNTCGGCGTCCGNGNTTGATTGAGN  
GCCGTTTCATCTCTTTCAGCTAAGCNGGGCNCCTTNTCTTTGTAAGNCGGACAACAACAGCNGANAGGCT  
CGNCAGNCATCTTAATAGGANTTGAGGGGGANNGTGAAGGCTNTGNAAAANGTAGATNTTCNTAATA  
CCTNTTTACCCATNTCTGNNAGNTGTAGGTAGCTATATGTAACNGTAGGATANACNTTNTCTTTNCCGA  
ANTCCNTTNNACATGAAAACNTTAAATCNCCTAATCATATCCTTNGTNAANTTTNNCGNCAAAAATAAC  
35 NTGCCCTCTGAACCGGCTTGCCCTTGAACNTAACCTGAANNAATGGTCAATGTNCCTCGANCCNTCNA  
NGGGTCTNGAGGGCCCCAGTAANACCCCTTCTTAGGAANNCCNNAACGCCCNNNCCNTTCTAATNATNN  
CTTTATNGACNTCTNNGTCNNANTCGAGTTCACAAGNNTAAANACNTTNTCCCNNGGGNANNAANNC  
AACTANNNTGGNTTCNCTTNCAAAACCTANTANNGTCANNGNNTTTTTTGGNCNNNTNNAACGTTCTC  
CTTCNNNGTNNNTNNTNGNTTTTNNNTNTNTANNNCGCNCNAANTAANNTTCCTCANCNNGTGTTTNTT  
40 CAGAANNAANANATATNGANGCCNCNATCAACTATGCTANTTNNNTNCTCANAANNCACCCCTCATN  
GTNNGAGACNACTACCTNTATTNTTTNTCG

TTGANAANANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
AATTCGGCACGAGGGCTNTACCANCAGGCAGGAACGTGGACGTCCGNGGGGTACTCGTTTGACCG  
ACGAAGACACCTCTACTGCAANGATGGTNAACGTNCCTAAAACCCGCAGGANTTTCTGTAAGAAGTGT  
GNAAAGCATCNACCTCACAAAGTGACCCACTATAANAAGGGCAAATATTNCCTGNNTGCCANGGAA  
AGAGNGCNCATNATCNNAANCNAAGTGGCTACTCTGGNCNANCNNAGCCAATATTCTNNANTAAGN  
NTNATANACCNCACCAATNANCNGCTTAGACTTGANTGCTTTTGANCCCATNCTNNCNTNTCCCN  
50 CNGGATNCTTNTCCCATCACTAGNTCCCNCGCATNTTTGNAACTTNTANNANTANTAAGANANANN  
NNCNGGCCNNATNTGATCACAGNTTNTCNNTGCTTGNCGGAANTNANTTNTNANNNTTANTNNTTCN  
AANAAAGAAAATTNCTTGAAATTNANNTCATACTGNCNTNNAATNANNANNTACGANANNNNC  
CCATANTTTTTTGTNTCGCANNNNNNNNTNNAATNTTCTNCCCTNNTNGNGNTTTCCTTCNNTTCC  
CNNGTCTTNNNTTNTATNTTATTTNTNANCCNCTAANTANTCNNTNTTGNNTNNTTNTCNTTGC  
55 NCCCNNTNNTTNTCTNNTTNNANTCCTNNTTNTTTTTNNCNCATGTTCCACTANTTCCTCTTNTGTN  
NTATATTGNTCCTANCNATCCTNTNTTNTCCCTCTTNTTANCNAGNGTGNTTACNTNTNTTNNCCNT





NGCNNCGGCGNCGCTGCGNTCNTNNNNNNNNNNNNNNNNCCNNNNNTCCTCCNCCCCCNCACTTTTN  
 CCCTCNNTCCTCCNTCACCNCCCTNCCCNANGGGNGGNNAGTNNGTNNGGNATCTTTCCCTTTNAGN  
 CCCCATAGGAGCCGCATNACANGGCCCGCTCCNGCATCTAGTTGGNTNCCCCGNCCTGCCANGCA  
 NTCTNCATAANTATGCATTTTTTCTCTCTCCTCCGGNGGNCNCNNTATNTCANGNCCTCNTTAT  
 5 NGATNAAACNNNNNTNNNTNTNCNTNATNNGNNGNAAACCNTTANTCNNGATTNNNTATGNNNNNA  
 TNACNTNTNCANGANNCTNGANNNTATNCTNGCNTNGNANANAATCCANNTTAAAGGCCNAGNNNN  
 ANGAATTTNAAATNNNCNGCCAATCANNTNNNTNANNATTANNNNNNTAAAANCCCNAAANCTGGCATC  
 NTCNNNNACTACNTATTCCCTTNTATNANNGNCANGNTAAANNNNNNNATCTATNAANGNCCGCANGC  
 NNNCCCANATNCNTTATACGNGTNCNNAAAATNNNNCGGGNCGATNCNACNTCNCTCNCNCANANTN  
 10 TACCTCNGCTNNNANTTNTNTATANNNNANTTNGNANNTNTATGNNNTTNTNANNNTNATTGANNNTN  
 NNGNNGGANAGGNGNCNNNATANNNTTNCNTTTNCGACNNCCNGCNCNNNGAANTCAGCCATTCTNA  
 ATTCCNCGNNCGTTTANTAGNNTCGANTTCNANTNNAACTACGGTCCCTAAACTCCCCNTNNNTANNN  
 NGTCANTNNNTATCGTTATTNATCGCGACNCCGANNAATTTNTTGTACTTCGNCANNCTANTCNANGG  
 ACNACANTAAATTTANCNCNACNNTCNGATANNTTTANNTNGNTGNNACNCANCNCTATNNNTATN  
 15 CGTTACTTTACCTCTNCNGTCGGAGCGNCANGCCTANNTCNTTCTANTCNTAANCCNTTTCGCNNNNC  
 NTGACNCNAAACNNCNTGANATNNTTTATNCATAANTTANGTNNGCTATACNAAACGNNNANTTNTCTNN  
 NCACGCNGAAANNNTCNCNTCTNTCCTNTNACTNANCNNNTCCNGAACCANAGTGTNNGTNANAN  
 TGTNCATNTTNTCNGTNANNCTNTCNNNTCAACTTNTNCATATNCNNGCTGTGGATGCTCCNATNTGN  
 NAACAATACGNACNNCCNCNTGGANTCNNCNANTGNNCGNACTNTANACNGCNACNCTATAATNNAC  
 20 GNCGNTNNCTTCATACNCNACNCACNTATNATANCGTATCANNTCNCANGCCAGANNCCNGNCATAG  
 NGTNTNNGATCACACCTGCNNTTNGNCATANCGCATNTACNTGTNCATCCNACCNCCTATNGTNTTT  
 ATTATTCGCNNTGTGGATNCACACGAANANANCTCGNNACTCTCATNANNCTNAGTNTCATNTCTNT  
 ATCTATNATGNCNGNACANNTACGTCGATATACGNTGTCTNNTTATCTTGTNTTCGACATNATGTNG  
 25 NAATGCTAGTGGNCACTNNTTANNTGTGNTCTTNTACTACGGAGCANNANACACACACTCNATAN  
 AGTANTGATATCACTAGNTCCC  
  
 TTTTGAAGGNCCCNTANTNNGTGANGTTCGGTCATTTAACAAGGTGTTNTTTCCCANANNANTACAC  
 NCNAGCNGNTANNNNTNTTANGAGCATTCTNATNTCTACTNTANGTNNTTAATCATNACGTAGTNT  
 30 CTCCGAGANCTGCNANAATCATNAGCNNNACNNTANTNTANACGGGGCNNTNACNTGNCTANTAG  
 TGNNCANNNCAGNANAGNATNANAGGCGACNCNTNGANAGGACGTTTATGNGACAANAGGANTTG  
 AGAAGCTNCGAATGNGNATCGCAANNNGGANNATGACACTCANNANGACGACNATATGAGANNAN  
 ANTNNNNNNNAGTNCNNGNNTTANNTANGTAGTCTTNGNTGTTNTNGNTGANCNNANGCTNTNGGA  
 GAGTNNANNNGNAGNTGNCGTCTTGTNNNTTNGGANNNGGANTGNNGAGTAGNNATATNNAAGTTCGT  
 35 CGGTTTCNNGTGNTACGAGACNANNNCGANTNCATNNGNNAATNTNGTGAGNNTNANCTNGTCGAAG  
 TTNCNTCNAACGNNTATNNATNCTCNTAAGACANTACANGATNNNGATNGTCGATGANATNNNTATT  
 ANTNNCGCAGCNAGGNGACTCGNGTNGTCGTNNTGCANTCNNNGNNTGNCNNNNATNANGAGTANTG  
 ANNANNNNNTNCGAGTNNACGACACTAACNNNTTGAATANNTCTNNANTANTNNNAGCGATGNTNAA  
 CNTTTAATNGTCNGCANATNTNTNTNAGCANNACNGNNACNAAANGATGACGCATGNNNTGTCNNC  
 40 NNNTAAGTNNNTNTGTNNGNNNNNCGTCACNNTGGANTNTTNNNTTNNNTGNNCTCNCNCNNTCT  
 NGTTNNGTNGGTANNNGNAGAAAGANCTCAACNANCNCTTACNATNTTCTACNTATNGTCNGNCN  
 GATNNNTGNGNNTTNAANCGNGANNATACTGTNNNAANTNCGCANCTGNCNATGTANCNNTANNNNA  
 CGANTTNNANATNTNCAANNNTACGNANTCNANTNTTNGNNTACNTNTCGTNTCTNCTNANNNGC  
 NATNANTGANNACGGAANNTCNGTNTATNGGCGNNTGCTNGACTTNAACNACCNNNNNGNGAATTNG  
 45 ACTACNNTGGANGAGNTNNGGAAGGNACTANCNCAATTGCATANNTTATNAGAGNCNTTGTNTNNN  
 TNTNCGTAANTGTATNACGANACCTAAGGGGTCGNTGACGNGTACCNGTGNGTNNNCGACAGNANGT  
 GNCNGACGNNNTANGGACGCNTCGANATAGTANNTNTNNAATCCNANNNTAGACNNCNNNTAGGTNA  
 TANGNACNGNNGGANNACNGTANGATNNNCNAAACGNANCAACNTTNTGTAGTNTNCTTNNCTNNANG  
 GANCGANNAANNNNGACNCTNNNAACNGAAGCAANATCNAAANTGAGCGACNTATGTACGNNACG  
 50 NATGCACNNACGGAATGCNAACGNTCNAACGGAAAGNTTNNNNNGNNAACGTATTTAANGTNNGTNNC  
 GGNAGNGAANGTAGTAGNGNACGNNNTCGAACGGATGCNAGTAATACGNANNTNTGNGACGTNA  
 ATTACGCNACGN  
  
 GNCCTANTAGTGGAGTNGTATTNCATCGTATTACACTCTANAACCTAGTGGATCCCCCGGGCTGCAGGA  
 55 ATTCCGTCACGAGGACCANTGACAAAGATAGGANTACANNGTGTATTAGGNANCCNTCAATTCTTGCA

CTAAGCACCAGAAGACTNGANAAATCTAAAAAACAAAAAANANCTCATTNAACTAGGATAATTCA  
AANGGAATATTAAATCGATAAAACCAGGACTCACNTGCCAAAGTNCNCATCANGGGACGCTCACATN  
TNGTTTCCTTCCATATAAACTTGTNNGCCGCTATATTNAAAGCCTTTTTTCCAAATATTTTCATTGANT  
TTCTGCNAGATCTANAGCTCTGCTCAGTGCCTCTACAAAACAGNGTACAATTNTTATACTGCNTNGAN  
5 AATCCCCCGGTAANAANCATGTGCANCTNTGCAANANTTTTTGCTCAAAAACATNANTGACCTGAGA  
GCAACTNNCCTTTCTATTCTAATTGCTACCTACAGGACCAGCAGGGAGAANTNTCCCTNTTCCCN  
CANAGAATACTGTNATGCAATTTACNNNNNGGATGCNTNAGGCCTTGNTGAAAATTGANGCCTCACCC  
TGAAATCNATAAGCCCTCCCCAGGGGAAGNNAATTCTCTNCNGCTTCTGTNCTAAANTNGTNCCNCNT  
10 NCCCTAGTNNGTACANTCCACTTTTNCGGGCAATTTTTNATTAAANCAAAAATNCTTGGTGTNCTTTTT  
CNTAGAACANCTATTATATTCATTTTTCCCNCAATTTNCTANTNAAAANCCANNNGGTNTACCTTNN  
NTAACCTCTAAAAAATCTGNCACTTTTCCNGGGCNAANAAAGGNTNACTACTTTTTCTAAGGNGATA  
ATNCAANATTCNTTTNTCTACTNGTGTGGGNNTTAANCNTCTCTTTTAGGCAANGNGNGTCGTNATA  
AAAAACNGNCTNCTCTCCCCAANNGTNNNTTGNCCNTGNNTNANNNTTTTTCGATATTNAANAANTN  
TTTCCCCCNGACCCCGCG

TTGAGNCCTNNTAGTGNNGTNGTATTACANGTGNNGGACNNTNTAGAACTAGTGGATCCCCGGGCTG  
CAGGAAATTNCGGCACGAGGGCNANNTGGGTACACAGCAGCTCTACTGGANCCNTGCTNTAAAATTC  
20 GGCCAGGGTTCTTNTCTTGGCCGNTCTGCTCCAACCGNCACGGTCTGATCCTNAAATACNGNCTCAAT  
ATGTGCCNCCAGTGNTTTTCCANCTGCATAAGGACATCGGCTTNTTAAATGCACAGCTGNCGGACNCC  
ANGGTCTCCTGTTTCAGGGAGGNGCGACAAGCCGGTANGNTNGNCGTCGGCNNTTGATCATTGTCNCG  
GTCTTCTCTNTCCCTAGCAGGGCTNTNCCTTTGTNTCGGGACAACACANTTNANAGGCACCGNGNTTC  
NTTNAANANGANTGAGGAGNGANGNGANNGCCNNNCANCANNTAGTATNNNNTAANACCNTTTTAC  
25 CCATTNTNTGCNAGTTTNTAGGTGCTATATNTCTATGNGANNAANAAAACNTTACTTTTTCACAANTCN  
CTAATAATGANCCNTTNANTNCCCTTAANCATTATNTTGGGATAATTTTTTCNCCNTTAANANCATGC  
CTTTGAANC GTTTTTCCCTNNTTATTACCCGANCTANGGATCATGTNCCNCCCTTGAGNGGTNTNN  
NCTCNTGNANTNNACCNTTTTTAAGACNTCANAAAGGCTTCNCNTCAATNNGACTATGGCCTTCNNNA  
ACTTTTCGGCCCTAAGGTCCNTTAAANGNTNANNCTTTTNCNCNGATNNAANAANTGANNTNCCTANG  
30 GNNTCNATTGAANANAANNCCCTTTTGTNAAACCNNTNTTCTTTACNTCCTCAAATAANCAACTTTN  
AAANTTNANNNGCNNTTNTTTTTNNCTTNAAAAAANTAANNAACNNCCTNGGCCCNCTCTGTAAAGG  
AAACTAAAAANCCCTGCCCCNCCTCTCTTNTNTTATTNNCCAAGTNTNNACGCNTCTCNNTTGNGTN  
NAATATTAAAAACNCTTGTTNTNTNCG

TTGAGNCCTNNTAGTGNNGTNGTATTACANGTGNNGGACNNTNTAGAACTAGTGGATCCCCGGGCTG  
CAGGAAATTNCGGCACGAGGGCNANNTGGGTACACAGCAGCTCTACTGGANCCNTGCTNTAAAATTC  
40 GGCCAGGGTTCTTNTCTTGGCCGNTCTGCTCCAACCGNCACGGTCTGATCCTNAAATACNGNCTCAAT  
ATGTGCCNCCAGTGNTTTTCCANCTGCATAAGGACATCGGCTTNTTAAATGCACAGCTGNCGGACNCC  
ANGGTCTCCTGTTTCAGGGAGGNGCGACAAGCCGGTANGNTNGNCGTCGGCNNTTGATCATTGTCNCG  
GTCTTCTCTNTCCCTAGCAGGGCTNTNCCTTTGTNTCGGGACAACACANTTNANAGGCACCGNGNTTC  
NTTNAANANGANTGAGGAGNGANGNGANNGCCNNNCANCANNTAGTATNNNNTAANACCNTTTTAC  
CCATTNTNTGCNAGTTTNTAGGTGCTATATNTCTATGNGANNAANAAAACNTTACTTTTTCACAANTCN  
CTAATAATGANCCNTTNANTNCCCTTAANCATTATNTTGGGATAATTTTTTCNCCNTTAANANCATGC  
CTTTGAANC GTTTTTCCCTNNTTATTACCCGANCTANGGATCATGTNCCNCCCTTGAGNGGTNTNN  
45 NCTCNTGNANTNNACCNTTTTTAAGACNTCANAAAGGCTTCNCNTCAATNNGACTATGGCCTTCNNNA  
ACTTTTCGGCCCTAAGGTCCNTTAAANGNTNANNCTTTTNCNCNGATNNAANAANTGANNTNCCTANG  
GNNTCNATTGAANANAANNCCCTTTTGTNAAACCNNTNTTCTTTACNTCCTCAAATAANCAACTTTN  
AAANTTNANNNGCNNTTNTTTTTNNCTTNAAAAAANTAANNAACNNCCTNGGCCCNCTCTGTAAAGG  
AAACTAAAAANCCCTGCCCCNCCTCTCTTNTNTTATTNNCCAAGTNTNNACGCNTCTCNNTTGNGTN  
50 NAATATTAAAAACNCTTGTTNTNTNCG

NAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGTTC  
TGTTAACTCTTAATAAACTTACACATGCAAGCATCTACACCCAGTGAGAATGCCCTCTAGGTTATTA  
55 AACTAAGAGGAGCTGGCATCAAGCACACACCTGTAGCTCACGACGCCTTGCTTAACCACACCCCCAC  
GGGAAACAGCAGTGACAAAAATTAAGCCATAAACGAAGGTTGGACTAAGTTATATTAATTNGGGTGG

GTAAATCTTCGTGCCCCGNCCCCCGGGGGCCNTCCAATAANCCCANNTNACANGNNNTCCGGGTAAAC  
 GNGGTAAAGNNCCNTACCNAAATANGGGTNAATTCTTACTNANCTGGNAAAAGNCNTGNNTTAAATNA  
 AAATNAATGNCGAAAGGGNCCCTNCCATNNNCNCNCNTNTNNNTNANANCCNAACTGGGANTANA  
 NNCCCCANTTTGNTTANNCCTTAACCCCGNTTATTNCCTTAACCAAATTATTGNGCNGANNCTNCTNN  
 5 CCACNGNTTAAACTNAAAGGACNTGGNGGNGNNTTATTTTCNTNTAGANGNANCNGGTNTNATATN  
 GATAAANCCCGNTAAACCTTANCCAATTNTTGGTTATACCGTNTATTTACCGGCATTTTNAACNAANCC  
 TTAATAAAAAAAAAAAAAAACTTNGGGGGGGGGCCCGGGNCCCAATTTTCNCCCTTTAGNGGNGGNNNT  
 TTNANNN  
 NNN  
 10 NNN  
 NNNNNNNNC

ANCAAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
 15 CGNNANCAAGCTNNNCCCTACCNCCNACCTCGNAGNGGGNCCCGGCCCTAGGANTCCCTATGNCG  
 AGTGGNTATTACAATCAGGTACAACCTGCAAGANANNACNTTGGNNNNNANCCAAGCTGGNTCTATAN  
 CAAGCAANCTGNNTCTATGATANNGGNTCTTAACATGATGACCCNTTNTAGAGCANCCAGATCACAA  
 TGAAAACATCNCNTCTGTANNNGTCTGGCCCATGATGNTATNTCCTCANTATCNCNTCTGACTCCAGC  
 AATNAATATACAGCGTNGCANAAAAACAAATNCCACTTGTGGGGGGGCTGGNGACCGAAGTAANC  
 20 CTTAGATGNTGTNAAGAAACAGCCTTGCATACGNGCCTGGAATGTTANCTNCCTGAATCAAGGTNANT  
 TGAAAATGNTCAAATNCGACATGCTCGAGNGAACATACNCATTTTACGAACTCNGGGGACCTNAAAT  
 GNACTGGGAATGGGTGAACCTTAACCTCANATAACCATTATTTCTACTTCNGGGGGGNGGGAATTCTTT  
 ATAANAAANGGANTTNCNTTATGGCCACCAAAAAATTTGAAATGCANCTNTTGGGTGCATNCTTAAA  
 AACGGCGGGAAAGATCNCCTGGTCATTTCCANGGCCNTTCCNTTCANTATNACANAANTTCCAAGGCTT  
 25 TNCCCCCCCCCAANTNTTCTTTGTTAANCTCCGNNTTGAACAATTTTGGGAAAAACCTAAANAAACC  
 CTTGGGGAACCTTAACAATCCCCNNAAGGAATNTCCTTTTTTCCCNACCNAGGGANNNGNANCCCCCG  
 TTTTCCCCAAATTTNAAGGGCGGGGNTTNTTTTTTTTGGTTTAAACCCCCNGGGGGANTTCNCCCTTT  
 GGGGAAAAAAAAAAAAAACCN

TTTTGAANCACCATTCTGGAAGCTCCACTCGCGAGTGGCGGCTCGNTCTAGCAACTAGNGGANCCACT  
 CGGNTCTGAANNAAAATTCNAANCCCNANGATTTTNTNTCCCNCCCANTTACANCNNCAGCANCCNNCT  
 NCAATAGGGGGGANCNTNTTNNNAAACATCNCNTTAAANCNCNCCCNCCCNNTCACATCNCNNNCNAT  
 CTNNTTCCNNNCCTTCCANANNANNTCCTCNCANNACTAAANATCCNCCTANNANCANNTATNTAC  
 35 NTNNNNATAATNCCNNNTTTCCNTTTNTCTCACAATAATNCGAANATTATAATCATNANNNCNCNAAN  
 CNNCNACANANCNATNTNNNNCNAATTCGAAANNTTCNNTNCNAANAGCNTAAACNATNANANNCAT  
 NNNNNNCNCNTNCNANANNTAACNACNNAATNCAANTCNCNCCCAACCNCNANANAAATNCACCCACNCA  
 CCCTAAANNTACNATNNATNCNNCACNNTAANANNAATTCCTTCTCACTANCAATTNATNATATCTATN  
 GNNNNNCGCTNCTANNTNTNAAAANCTNNTNNANATNNCCAATCNCCTACTCATNGCNTNCCCANTTC  
 40 GNCNTNAAATNTNTNCATTACNACCANNCGNNCCTNNCCNTCATATCTNNTTNCNCNATNCCNCNNNATN  
 CATACANANTCNCNCANTGAACCNTTAATNTNNNNTNACCNTNNANNCNCAATCACCTANCANANTT  
 NNCCNCCTCNCNCTNACTANACNGCCNNTCAANNNCNATCTNATCNANNANCCCTAACTANNTNCT  
 TCCNNNTNCANCTCNACCCNAGNACCTATTAACAACNNNNAAANTNTNAATTACNTNTANNACNAAN  
 ATCTACAACATATCAGATCNCNTTTCNNTNACCACCTACCATANCTANTCNATCATCTTCCANACAATC  
 45 CTNNCCTCACCTNNNTCCNACCNNTCACNNNCNCCACCAATCANCNATCACNNNNACCTNCACNANT  
 ATCTTCACTANNCAANCANNTCAANTTCTCTCTATTAACANCAATCCNCTNCTTCCNCANCAANAT  
 CANANNCAACNCANNCNNTTNCANCTCNTNNNAACNGCCTAGCCCNCAATNNNNTCANCNTCCAC  
 AACANTNACTCACACATACNCNATACTNAAACNNNTNAGACNCACTTNTTNCNCANACCATTTNCAGTC  
 CTACNCNNTNTNATATATCTNTGTNACNTANACNCAACNTCTACNANATACANTANACCGNTANTCAC  
 50 ACNACNGNNACACNNACACACACTCGTNTTANTACAANCGNCACCTCNCNTTNGNGNNNCANTCGTC  
 NCTACANTCGCC

TTNNACAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 TTCCTGTAACTCTTAATAAACTTACACATGCAAGCATCTACACCCCAGTGAGAATGCCCTCTAGGTGA



AACTTCGCTTTCAAAGACAAGTACAAGCAGATCTTCCTGGGGGGCGTGGACAAGCGCACGCAGTTTCT  
GGAGGTACTTTGCGGGCAACCTGGCCTCCGGCGGGGCAGGNCGGGGCCACTTCCCTGTGCTTNGTCTA  
CCCGCTGGATTTTCGCCCCGAACCCGCTNGCGCCCCGACATTGGGCAATTCGGGGCAGTGAGCGCGA  
GTTNANNGGGCCNGAGATTGNCCTGGTGAAGAATCACCCAATTCCNACGGCATTTCNGCNGGCTG  
5 NACCAAGGGCCTTCAACNGGNTCNGTGNCAGGGCCATCAATCATCTTNCCNNNGCCGGCCTTACTTTC  
NNGNATNTACTAAACCTCNCAAGGGTATGTCTCNCNCNAANCCCCAANGAACAACGCANNATCNTG  
GGTNGANNCATTTNGTATGAATCNCNCNTANANCCGGTGACNGAGTCNGANTGNTGGGTCTTGGTNTT  
TTCTACCCCNTTTTANNANCCGGNTTCTGCTNGGGNNCATTTAATAANTTCATNNTTCNGNGGGGCNCA  
ANGGGAANCCNNNANTNTCTTTCTCCNTAGGGNCGCCC

10

TTNAGCCTATANGGAGNNGNATNACAGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
GGAATTCGGCACGAGGGCAACATGGGTCAACAGCAGCTCTACTGGAGCCATCCGAAAAAATTCGGC  
CAGGGTTCTCGTTNTTGCCGGGCCTGNTCCANCCGGCNCGGCCNGANCCGNAANNNGCGCCTNANNA  
15 NGNNCCGCCNGGGTTNCCNCCAGNNNNCAAAGNNNTNGNTTNATTNAAGGACCCNNGNNGNCCCCN  
NNGGNNTCNGTTNAAGGNNGGGCCAACANCCNGNANTTNNGGGGCNGGGNTTGNANAATGGCNGT  
TTNTTTTTTAACTATACNAGGNTTTTTCTTTGGTACNGACACACACACANTGAGAGAGGNTNGCNCNT  
CATATNTATAATAGATATGAGAGGGGGATATGANAAGCGCTGTGAAAAAATATATTTTTTCTATAACC  
TCTTTACACANATCTTGTGANATTTATAGGCNNTATNTNANGTGNGGNANACANAANNNTTNACAAA  
20 NNTCTNTAATGAGACANNTTATCACTCTACATATNTCGTGAAANTTCNGNAAAAAANNCGNNNNC  
NNTGTCTCTNNNAAACANAATATGGGCATNTGTAGAGNTCTNGNTGTTTGGNCNCANATACCCTTTAA  
GNAAGAANCAAGACTGTGTTTATAATACTATAACTNTTGTGGACAANCTCANANAAAAATAATTTTTCT  
TGCTGAAAAAANAATAAAGGGTGGTGGAAAAAANTATTATGTTGACGGGTNTTGGGTGCTTNCA  
AAAAACNTNAAAAGGGTGGTGGGTGTTTTTTTTANNAGGAAGAAAAAATTTNTTACTGGCTGCTTTTT  
25 NAAAAAATAAAGGGTGGTGGGTGTTTTTTTTTANATNAATNAANAAANCCNCCNNNGTTTNTTAA  
AACNATTTTTTTTTNANAN

25

TTNAGCCTATANGGAGNNGNATNACAGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
GGAATTCGGCACGAGGGCAACATGGGTCAACAGCAGCTCTACTGGAGCCATCCGAAAAAATTCGGC  
CAGGGTTCTCGTTNTTGCCGGGCCTGNTCCANCCGGCNCGGCCNGANCCGNAANNNGCGCCTNANNA  
30 NGNNCCGCCNGGGTTNCCNCCAGNNNNCAAAGNNNTNGNTTNATTNAAGGACCCNNGNNGNCCCCN  
NNGGNNTCNGTTNAAGGNNGGGCCAACANCCNGNANTTNNGGGGCNGGGNTTGNANAATGGCNGT  
TTNTTTTTTAACTATACNAGGNTTTTTCTTTGGTACNGACACACACACANTGAGAGAGGNTNGCNCNT  
CATATNTATAATAGATATGAGAGGGGGATATGANAAGCGCTGTGAAAAAATATATTTTTTCTATAACC  
35 TCTTTACACANATCTTGTGANATTTATAGGCNNTATNTNANGTGNGGNANACANAANNNTTNACAAA  
NNTCTNTAATGAGACANNTTATCACTCTACATATNTCGTGAAANTTCNGNAAAAAANNCGNNNNC  
NNTGTCTCTNNNAAACANAATATGGGCATNTGTAGAGNTCTNGNTGTTTGGNCNCANATACCCTTTAA  
GNAAGAANCAAGACTGTGTTTATAATACTATAACTNTTGTGGACAANCTCANANAAAAATAATTTTTCT  
40 TGCTGAAAAAANAATAAAGGGTGGTGGAAAAAANTATTATGTTGACGGGTNTTGGGTGCTTNCA  
AAAAACNTNAAAAGGGTGGTGGGTGTTTTTTTTANNAGGAAGAAAAAATTTNTTACTGGCTGCTTTTT  
NAAAAAATAAAGGGTGGTGGGTGTTTTTTTTTANATNAATNAANAAANCCNCCNNNGTTTNTTAA  
AACNATTTTTTTTTNANAN

40

AAAAAGCTGGAGCTCCACCGCGNGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGGA  
GGAGGCGTTGGAGTCACGGGTACGCGGGAGCCAGCAAGGAGGGGGACAGCCACGGAGAGCTGAGGA  
TGAGGATTTCGGCCCCCGGGCCTCAGGCTCTCAGGACGNGCCTGTCCAGGCCAGCCTNTGAGCTCCA  
GCAAAGCCCCGACCCGNTGCGGCCNTATTGTCTACTCTGCANACTGTCCGACCCAGGCTNGGNGCTGT  
50 GCCTGCAGGAGGGCGGCCCGGNATCGNTGANCCACCATNTTAGGACTTGAGAGCCCGCCTGGGG  
ACCACGAGACNAACCCCCCAGGCTCAGCTCTGGATTACCGAGGCCACTCTTGGGGTCGTCTGCTGC  
TTGGGTCTTTTTCGGGACCCCAACCTTCCAGGCCCTTTTTTGACACTTTTTCCCCCTTCTTGCCATN  
TTCCCCGNANTGCCGTGCCAGGCCTGAAGGTGGTGGGNTGGTTAAAGGCTNANCCATTACCATTTAC  
ACCTGTCCCAAAATNTGATACCCCTGCAAAGGGAAGGGACCACNCTGTTTTCCNAATGAAAGTNTTN  
55 CCAAAAAANACCTGGGTTTNGGNAANAATCCTTTTTCTTTGCTTTCAATTTTTCCNAAGGNAAAACCCC  
AATCTGAAAAATNTTACCCTNGGGGAGGGAAAAAACCTTGAATTCNAAAAAACAACCCCTTA

45

50

55



AAAGGGGTTTGGGAGGANGGGANCCCTTGGGGCCCTGGNAAAGGCCCCNTTGGGGGCCNTTTGTTTTTC  
 TTTCTNGGGAGGGAAACCCGGGNTTTTCCCCAAGGGGGGGTTTGGGCCNTTTTGNAAAATTNNAAAA  
 ANTTNGGGGCCTNGTTTNCATTGGNAAAAAAGNTTTTTTCCCCNGNAANGGGTTAAAAAGGA  
 AATTTTTTTNCCCCCCNAAAAAAAANGG

5

TTNANCAAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 AATTCGGCACGAGGGTCAAGCACACATTTTANGAGAAGCTNCCTGCTCATCTTGTGAAGGTTACTGCT  
 GACCACAAGGAGCAGATGGCTCCATTACTGATGTTAGTGCTTTTCCAGATATGAGAAGATGCAAGAAT  
 TAGGCTCATAAAATCTCCTGAAAATATCCACCTGGTGGCGTGTTCTTCCAGGTTTTCCAGAGCACAGA  
 GTACCTCGTTCTCGATCTCCACCTTGAACCTTTTCAAGGTGTGTTAAGGTTCAGTGCCTGCAGTGGCTA  
 GTGACTTAATCCTTGTAGAGGCAGAGGGCGACTGACACTTTTTAGCTGGCAATGGCTGGGATTACACG  
 GCAGAGTCCAAATTTCAGCTGGAGGCCAGGACCCCCGAGCTTCTCCTCAGAGGACGGTCAGGGCCTCA  
 GCTGCCAGTGGGGTGGCGACCCTGCCTGTGAGTGGGAAGGGCTGGGTTCTGGGTTCCCTCTGAAAAG  
 TGGGGTTCTAGCCAGGGAGGCACCCCGTTAGCCCCCTTGACCAAGGGTAGGAAGGANGTCCCTGGG  
 ANGGACCTNTGNCTGCACATCAAGNTTACCGNGACTTTTACTGGAGTCGGCAACACCGTAAATTAA  
 ACACGTGCTTNTTTCTNCAATCCANGGTCTTGGGCAGGTGAAGGAAATAGGCCATTTTAAAAAATGC  
 TTTGNAAGGGACTTTCCTTGGGGGGGCCCAATGGGTAAAGGAACCTTCNCCCTTTCCAATGCCAGGGG  
 GGGGGCAAGGTTTTGAATCCCCTTGGNCCAGGGGAACCTTAAAAATCCCCCATGGCCTTTGNNGGGCC  
 AAAAAAGGCCCAAATTCTTNTCTTCCNNAAGCCNCCNTTNTNNAACCAAAAGGCCAATNAAAAAN  
 AACTTTTTTNAAAGGNAAAAAATAAT

10

15

20

TTNNNCACAAGCTGGAGCTCCACCGCGGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
 GGAATTCGGCACGAGGNTCAATCGCANGTTTTNANAGAANCTGGCTGCNTNTGCAGCNCNTNNNACC  
 GNTNGACCCAGGNANCNTNNNTNTNCTNACTGNTNNNANGNCNATTCATNGGCCATATNTCNCNT  
 ACTNTCGCACNTTTTTTNNGCCNACACANTGNACAGNTGNCTGNTNANTCTNNGTCCCTGGAGGANNT  
 GANATTANTAGNANCCTATATAANCCCTTGACTCCTTTAAGGACCNTNGCNGNAATTGNCTGCNCTN  
 ANAAAAACACTGNNNNNTNGATNATGATTNNGGNGATNTGANTCTTCCATAATAGNCAATGGTTGAAN  
 AACACGCTTTATGANCTTATCAGNCCGTNGGCNTGCAACNCNATNNTTTTTCATTTTAGGACCNTCTAA  
 GTCTTNANTTGCNNATGCTGGGAAANNCATNCANNANGANNCAAGGGTCNNGGANAGCTTTCCTT  
 TTGANAGATGGGATTGAAGNAAAGAAAAATCNCCTNGTTCTTNTGTAGCTCCAANGTGAGGAATGGA  
 AAAAACGTGNTNGGCTTCGTATGCCATGCGCACCCNATTTNCTTTATNTGNACTGGTTCNTTTACCT  
 CTGAAAATACCCACAGGACGTGGATAANTTNTTGGCCTTTTACCCNNGGAGGAAAAGGGCCAANAAA  
 CAATTCAAAACCTTNNCCTTAGGAAGGTCCCTTAANTNGNNGGCTTGCCATGGGGTNTNAAAATTIA  
 NCCTTGCCNCCNNGGGGGTGGCAATTNGGGAACCTTTGCCTTTTGGGNTTNAAAAAACNGTT  
 TTTTNCCTTTTGGGGNNNNNNCCCNAAAANTTTTTNTTNAAGGGGGGGCNCCTTTTTTTNAANNNNC  
 CCTNTTNNNNNNNNNNNTTAACAGTTAANGGNANNTTTN

25

30

35

40

TTTGAACAACAGCTGGAGCTCCACCGCGGGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTG  
 CAGGTTCTGTAAACAGGNNGNTNNANGAGNCATGCAAAACNTCNACACCCCATAGGGNATGCNNNN  
 NAAGNTATNAANACTAAGAGGAGCTGGCATCANGCACACACNCTGTANCTCACGACNCNTTGCTTAA  
 CCACACCCNCACGGGAAACANCAGTGACNAAAATTATAGCCATATACGAAAGTTTGACTAAGTTATAT  
 TANTTAGGGTTAGGTAATATNTNGTGCCAGCCANCTGCGGNCATACGATTAACCCNGCTAACANGGA  
 GTACNGCCGTAAANCNGTGTNNAGCACCATAACAAATAGGGTTAAATTCTAACTAAGCTGTNANAAG  
 CCATGATAACNANATNANTTANTGACNANANGNGACNTTACANTTNCNGACAGCACTATATNTAAG  
 ACCANAACCTGGNGATTAGNTCTCCATTNTGCCTAANCCTAANNACATTTTATTACATANCAACAA  
 TTTNTCNTCAGAANTNCTACTATCAACNNNCTTTATAAACNTTANAGGACTTTTGGNGNNNGCTTTTA  
 TATTNCATTGTTNNAAGGANGCCTGNNTNTATNTATCNGANTNAAANCACNCGACTNAAANCCTTINC  
 CCAATTCTNTTNCCTANTNTCNCNTTNTNAAACNCGGCCATNTTTCATCTAANCCTCTAANTGATAAA  
 CAAAAAANNATAATTNNNNGTGGGNGGGGNCNCNNGATCCNCNAATTCTNNNGCTCTNTTNGNN  
 NAGTCNATTTTANAANACGTTTCCNANNNGTNTCANGNTTTTTNTCNCNCTCCNCNANCNTNTTNNCN  
 CTNTATNTANANGNTCTTGNTNTANTNTNNNTCNTCANTANTATGTNNCNANTNATACTNTATNTAC  
 CNNCTGAGTNGAGATNCTACNCTGTNCNTAGTATGNTACGNAGCGCNATTTNTACATNTTCTAGTNN  
 TGNTGNTNNNCNNTCANNATNGCNCNCGTTGATNCG

45

50

55

5' 3' 4' 5' 6' 7' 8' 9' 10'



5 CCTATCTGGAGCTNCACCGCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCGTGA  
 AGGTTGGAGTCTCTCCAGAGAAGCTCCGCTTCCGACAGCACATGGAGAATGAGATGGCCCATATGCC  
 TGTGACTGTTGGGATGCTGAATCCAAAACATCCTATGGCTGGATCGAGATTGTTGGATGTGCTGACCG  
 TTCCTGTTATGACCTGTCTTGTTCATGCGAGGGGCCACCAAAGTCCCACTCGTAGCCGAGAAACCTTTGAA  
 AGAGCCCAAAACAGTCAATGTTGTTTCAAGTTTGAACCCAATAAGGGAGCAATTGGTAAGGCGTACAAG  
 AAGGATGCAAAGCTGGTGTGAGTACCTCGCCATTTGTGATGAGTGTACATCACAGAAATGGAGAA  
 ACTACTGAATGAAAAAGGGGAATTTACTGTTGAACTGAAGGGAAGACGTTTCAGTTGACAAAAGAT  
 10 ATGGTCAATGTGAAGAGATTCCAGAAAACACTACATGTGGAAGAAGTTATTCCAAGTGTAATCGAACC  
 CTCTTTTGGCCTGGGAGGATCATGTATACGGTATTTGAACACACATTCCAAGTTCGTGAGGGAGATG  
 AGCAGAGGACGTTCTTCAGTTTCCCTGCCGTAGTAGCTCCATTCAAATGTTCCGTCTTCCATTGAGCC  
 AGAACCAGGAGTTCATGCCATTTCGTCAAGGAATTATCGGAGGGCCTTGACCAGGCACGGCATCTTTTAC  
 AAAGTANACGATTCTCAGGATCCATTGGAAGACGCTTCGCCCAGGACTGGATGAAAATGGTGTGGCT  
 15 TTTGCGATACCCTTGGACTTCGATCNAGNGAACCAANACCCTCACACGGGGCCCTTTGCGGGGACCGA  
 GACTTCCTGCCGGAATAACANAACCAAGTCTNTTGAACCTGGCCCATGTTNTCCGCGATTGTGNCA  
 ATGGCAACNNCNTTTGGGCGGATNTGGAGGCCCAANN

20 NCTATCTGGAGCTCCACCNCNGTGGCGGCCCGCTCTAGAACTAGTGGATCCCCCGGCCTGNAGGTTNA  
 GAAGNGNCCATCTCCAGACGGCCCTGCANCAANAAGACCTGAGGGTGGNCCTGTGCTCCGTCGGGA  
 ANCACCGCAGGNAGGANTGCCTGGNGGAACTNAGATCAGCCTGGCGGACCTACCTTTTCCAGNGG  
 25 GGTTTTTCANTCTGGGGTATACNTNGCTTCTTTCAAAGCATTGCCTTTCNAAAAAATAANAGAGGACN  
 TGGGNANTCGGTTTCAAACCANCCACCTTTGGNNTCCANAAANTNGTTCAGTGACCCNTTTNTNGA  
 AAAAATTAATGTANTNTTTGGCCGGGAAAAAANAATTTCCCNAAAAAANAACCCGGNGGGAAAAA  
 AANACACANGNCCCAANNNGGANTAGTTNNCCCTCTAAAAGGCCCTNAAAAAATTTTGGCCCNAAAG  
 NGGCTCNAAAAAATAGTGGNNGGGNGNACTNTTTGGGNAAAAACACANTCTTCNCAAGTNTGCC  
 AAAANAAGNGGGGCCCCACGAGAAAAAANAACNGTTNGTGCNAAAAACTNTNTAACACCCCCCCCC  
 30 CCAGNAAAAATNCTCTTNTTGGTNTAAAAAANAACCCCCCCCCNNNCCCGGGCGGGGGNNCCCTTTT  
 TTTNCCCCCNAAAAAACAANNTNTNTTGGGCGCCCNCCNCCNTTTTTTTAANAANAANAANAAN  
 TTGGNNCNTTCCAAAAAATNTTNTCTCCNGGGGGGGGGANNCCCANNNCANNNGGGGGGNANN  
 NTNAAANNNGGNNGGGNNNGGNNNNCCCCCNNTTNTNAAAAAANNTTTTNTNGGGGGGNAANN  
 NNNNNNNCANNNNCANNNAANNNAAAAAANNNGGGGGGGGNCCCCCCCCCNNNNNGNNNNNNNN  
 35 NNNNNNTNNNNNNNNNNNNNNNNNNNNNNNNNCCNNGGGNNNNNNNNNNNNNC

GCNCTATCTGGAGCTNCACCGCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGTC  
 GTCTTGGAGGTGACTCGGCGTGATTGAATTTGCGGCATCTTCGCATTCACTCACAGGTCAAATGCAG  
 40 ATCTTCGTGAAAACCTGACCGGCAAGACCATCACCTGGAGGTGGAGCCAGTGACACCATCGAGA  
 ACGTGAAGGCCAAGATCCAGGATAAGGAAGGCATTCCCCCTGACCAGCAGAGGCTCATCTTTGCCGGC  
 AAGCAGCTGGAAGATGGCCGCACTCTTCTGATTACAACATCCANAAAGAGTCGACCTGCACCTGGT  
 CCTNCGTCTGAGGGGTGGTATGCANATTTTCGTGAAGACCTGACCGGCAAGACCATCACCTGGAAG  
 TGGAGCCCAGTGACACCATCGAGAACGTGAAGGCCAAGATCCAGGATAAGGANGGCATTCCCCCGGA  
 45 CCAGCANAGGCTCATCTTTGCCGGCNAGCAGCTGGAAGATGGCCGCACTCTTCTGATTACAACATCC  
 AGAAAGAGTCGACCTGCACCTGGTCTCCGTCTGAGGGGTGGNATTGCANAATCTTTCGTGAAGACC  
 CTGAACCGGGGAAGACCATNACCCTGGTATGTGGAGCCCANNTGACACCATCNAATANCGTGGANGG  
 CCAANATCCAGGATAAGGGANGGCATTTCCCCCTGNACCAANCANANNCTTAAACTTTTNNCCCGGC  
 CAAGCAGCCTNGGAANANNCCCCGCANCTCTTTTNTGGTTTNCNACANTTCCANGAAAGAAGTCC  
 50 GACCCCTTNNCACCCTGNGTCTTNCNTNCTNAGGGGGGGGNNTNCATNATNCTTNCNTNGNAATGA  
 CCTTGNCCGGGNANAAANCATTCTCCCTNTGNANGTGGGANCCCCANTGGATCNCCTCTCANN  
 AACCTNNNANGGCCCCNTAATCCCCNGNANN

55 ANCAANNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAAGTGGATCCCCCGGGCTGCAGGG  
 TTTTTTTTTTTTTTTTTTCCCNNGGNNNNNCNAANGGNCNNTNTTNGGTTTTTTTTNNNAAAAAAAN

NNTTTTTCNNGGGGGGCGTNTNNNNNGGGNGGGNAACCNNGNCTTTNNNNTTTTCCGGGAAGGGGNGGN  
AANNNCNTANNTTNNCCNGGCNNNAANNTNGCCCTTTTANANCNNCCCCCNNTTTTTTTTNNATTTT  
GGCTTTTTNNGGATAAANAACCCCTNTTNNCGGGGGGNNNGNTTTTTTTTNCANNANGGNCNTN  
5 NTTTGGCCCNNTANNGGGNNGGCCCCCNTNCAGGNTTTTTTTTNGGGGGGCGCCCNCCCNNTTTTC  
CNCNNTAAAAANCCNNGCACCGATTTTTTNAAGGGGNAAGGGNTNTNAACTTTCCNCCCNNTTTNNNG  
GGNTTTTTNNGGGGGGNGNGAAAAACGCCCNCTTTTTTTTTTNNNGGGCCCCCNNTCCCNNGGNNA  
AAAANGNTNTTTCTGNGNCAAGACCGGGGGGAAAAACCCCNCTTNACAAAAAATTTTTTNGGC  
CCCCCNCGGGCNCNTTTTTTTGNNAAACCCCTCCNAATTTTTTNNNGGGGGGGGNGGGGCCCCANTTN  
10 NCCNNTAAAAANGGGNGGGGGNNAANACNNNNNNNNNAAAAANNNNNAACTTNGNCCNNNNNCCNN  
NNNCNCCNTTNCANNNNANNCNNANCCNNANNGGNNNNNCCNCCNGGCCNGGGNNNCNNAN  
NNCCNCCNCGCNGGCGCNCNTTNCNCCNNGGGGAGGNCNNANNNNNNNNNNCNNGGANNNNCCC  
CCNCCNCCNANANNANGGGNGCCNGNCCNNGGNAANCCCGNNNNNNNGGNCCCCNNNCN

15 ANCAANNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAAGTGGATCCCCCGGGCTGCAGGG  
TTTTTTTTTTTTTTTTTTCCCNNGGNNNNNNAANNGGNCNNTNTTNGGTTTTTTTTTNNNAAAAAAN  
NNTTTTTCNNGGGGGGCGTNTNNNNNGGGNGGGNAACCNNGNCTTTNNNNTTTTCCGGGAAGGGGNGGN  
AANNNCNTANNTTNNCCNGGCNNNAANNTNGCCCTTTTANANCNNCCCCCNNTTTTTTTTNNATTTT  
20 GGCTTTTTNNGGATAAANAACCCCTNTTNNCGGGGGGNNNGNTTTTTTTTNCANNANGGNCNTN  
NTTTGGCCCNNTANNGGGNNGGCCCCCNTNCAGGNTTTTTTTTNGGGGGGCGCCCNCCCNNTTTTC  
CNCNNTAAAAANCCNNGCACCGATTTTTTNAAGGGGNAAGGGNTNTNAACTTTCCNCCCNNTTTNNNG  
GGNTTTTTNNGGGGGGNGNGAAAAACGCCCNCTTTTTTTTTTNNNGGGCCCCCNNTCCCNNGGNNA  
AAAANGNTNTTTCTGNGNCAAGACCGGGGGGAAAAACCCCNCTTNACAAAAAATTTTTTNGGC  
25 CCCCCNCGGGCNCNTTTTTTTGNNAAACCCCTCCNAATTTTTTNNNGGGGGGGGNGGGGCCCCANTTN  
NCCNNTAAAAANGGGNGGGGGNNAANACNNNNNNNNNAAAAANNNNNAACTTNGNCCNNNNNCCNN  
NNNCNCCNTTNCANNNNANNCNNANCCNNANNGGNNNNNCCNCCNGGCCNGGGNNNCNNAN  
NNCCNCCNCGCNGGCGCNCNTTNCNCCNNGGGGAGGNCNNANNNNNNNNNNCNNGGANNNNCCC  
CCNCCNCCNANANNANGGGNGCCNGNCCNNGGNAANCCCGNNNNNNNGGNCCCCNNNCN

30 AAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
CGGCACGAGGAACAACGCCNTGNTNNTNNTNNGAANNGGANCGGAAAGCCCNNNCGNATNCGA  
NNTNANGCTGANCGGGACCGACTCACAGNNNNNACNAANGCAGCCTGATGTNACACATNGNNAACCA  
TNATNNTCTACTGTCNCAATCNACATGTACCANNANGCATGNGCCNAGCNGTNTANACCTTGATCAAG  
35 TTAATGCTATTGANGCTANAGGNTACACNTTNTCANANCCTGANCNAGGGCCTTGGAAGNANNTGC  
GNAANCTNCNAANNGCCATTNNTTCCNCGCCGCGATACAGGGCGAGTACATGATCCNGTGCAGAA  
GGNNNCCANCCCTGCCTTANGTNACCGTGAACTGGGGGGTAAGGACTACGCGCTGTCCCANAGGAC  
TACGCGCTCAAGGTGTCGAAGCCGCGACGACCGTGTGCTGANCGGCTTCATGGGCATGGACATTCC  
CCCGNCTGGCGGGCCGTTTGGATNCTGGGCGACGTCTTTATNGGGCGTTACTACACCGTGTTCGAAC  
40 GGAACANAAACCGGTGGGCTTTGGNCCAAGGCTGGCCCGGTTTTAACTTGGCCCCCGCTTACCTGG  
TTGGANTNAAAAGAAGAAGGCGGCCAACAAAAAAACCAAAAAAGNANAAAAAANTTTTTGCTT  
AAAATTTGACTTTCNAGNTNGCAACCAAAANCCCCGATTATTTCCCAAGGGCCCNNTNGGGNCCNAAT  
TTNGGGTTTCCGGGGGTTTCCCCCTTNCCTTGGGGGCGNNNAAGCCNGNNTTGCNNGGGNCCNNGG  
TGGGNTGGNCGGNNNGAAAGGGGGAAGGGNAANCCTTGGAACCCCAANTTGGGGGGGNAANT  
45 TTCCGGGGGGGCGCAAAAAANCCNTTTTTTTTTTAAATTTGGNAAAAAACN

TTNAACAAAAGCTGGACTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
AATTCGGCACGAGGGTGCTCGTCCACTGATATCAGNGNACTCCGAAAAGGGGGAGTCCTCTGGCAA  
50 AATGTCACTTTGCTGCTGNGTTCAAGGCTCCCATTCGACCCGATATTGNTAACTTTGTTACACCAAC  
TTGCGCAAAAAACAACACAGCCCTATGCTGTCAAGNAATTANCAGGTCATNAAACCANTGCTGANTC  
TTGGGGTACCGACAGAGCTGTGGCTCGAATTTCCAGGGTTCGAGGTGGCGGGACTACCGTTCCGGCC  
AGGGCGCTTTTGGAACATGTGTGCTGGGGGCCGATGTTTGCGCCAACTAAGACCTGGCGACNTTGG  
CACCGCAGAGTGAATACGACGCANAAGCGATACGCCATCTGCTCTGCACTGGCTGCCTNAGCCTTACC  
55 AAGCGCTGGTCATGTCTAAANGGTATCGTATAGAGGAAGTCTGAACTTNCCTTTGTGGNGGAAGA  
TAAAGTNGAANGGCTACAAAAANACCAANGAGGCTTGTGTTGCTTCTGAAGAACTTAAGGNCTGGA

ATGATATCNNAAGGTCTATGCCTCTCANC GAATGAAANCTGGCAAAGGCAAGAATNAAAAACCCG  
 NGGCCGTATCCAGCGCANGGGACCCCTTGCNTCNTNTATAATGGNGGACAATGGNTTCATT CANGGCC  
 TCAAAAAACATTCCTGGAATACCCTGNTAAAGNAANCAACTTNACANTTTGNAACCTGCTTCCTGGGGG  
 5 CACNGGGAACTTTTTTCTTTTGAATGAAAAGGCCTTTCCGAAAGTNAAAAAACTATTTGGGCCTTG  
 GGNAAAAANNNCCTCCTTTAAAAAAAACNTTNAACCTTNCTTTTNCNAAAAA

TNNNNNAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GCCGCCATGGGCCGCGTGATTTCGTGGGCAGAGGAAGGGCGCCGGCTCCGTGTTCCGCGCACATGTGAA  
 10 GCACAGAAAAGGCGCCGCGCGCTACGCGCCGTGGATTTTCGCCGAGCGACACGGATATATCAAGGGC  
 ATCGTGAAGGACATCATCCACGACCCGGGCGCGGAGCGCCCTTGCCAAAGTGGTTTTCCGGGATCC  
 GTACCGTTTTTAAGAAGCGGACAGAGCTGTTTCATCGCTGCTGAGGGCATCCACACCGGCCAGTTTGTGT  
 ACTGCGGCAAGAAGGCCAGCTCAACATCGGCAACGTGCTCCCGGTGGGCACCATGCCTGAGGGCAC  
 15 CATCGTGTGTTGTCTGGAGGAGAAGCCTGGTGACCGAGGCAAGCTGGCAAGAGCCTCTGGAAACTATG  
 CCACAGTCATCTCCACAACCCTGAGACAAAGAAGACGCGAGTGAAGCTGCCTTCGGGCTCCAAAAA  
 GGTTCATCTCCTCTGCCAACAGAGCTGTGGTTCGGTGTGGTGGCTTGGAGGTGGCCGCATTGACAAGCCC  
 ATTCTGAAGGCCGCGCTGCCTACCACAAGTATAAGGCAAAGAAGGAACTGGTTGGCCCCGGGTGGC  
 CGGGGTGTGGCCATGAACCCTGTGAGCATTCTTTTGGANGNGGCAACCACCAACACATTNGGCAAA  
 20 CCGTTTATNTTTTGAANAAAAACCCCTTGTGCGGCCCGGAAANGGGGTTTTTATTTGTTGNCCCC  
 CCCGAAAAGGCCCTTTTTCNNGGGAAACCCAAAAANTGGGCCNGGAAAAAAGGAAAACCTTGGGGT  
 TGGGGCTTNAAAAAAAAAGTTTGGTTTTTTTTTCCACCTGGGAAAAAAGGAAAAAANCTT  
 GGGGGGGGGGGGCCCGNCCCCCTTT

TNNNNNAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GCCGCCATGGGCCGCGTGATTTCGTGGGCAGAGGAAGGGCGCCGGCTCCGTGTTCCGCGCACATGTGAA  
 25 GCACAGAAAAGGCGCCGCGCGCTACGCGCCGTGGATTTTCGCCGAGCGACACGGATATATCAAGGGC  
 ATCGTGAAGGACATCATCCACGACCCGGGCGCGGAGCGCCCTTGCCAAAGTGGTTTTCCGGGATCC  
 GTACCGTTTTTAAGAAGCGGACAGAGCTGTTTCATCGCTGCTGAGGGCATCCACACCGGCCAGTTTGTGT  
 30 ACTGCGGCAAGAAGGCCAGCTCAACATCGGCAACGTGCTCCCGGTGGGCACCATGCCTGAGGGCAC  
 CATCGTGTGTTGTCTGGAGGAGAAGCCTGGTGACCGAGGCAAGCTGGCAAGAGCCTCTGGAAACTATG  
 CCACAGTCATCTCCACAACCCTGAGACAAAGAAGACGCGAGTGAAGCTGCCTTCGGGCTCCAAAAA  
 GGTTCATCTCCTCTGCCAACAGAGCTGTGGTTCGGTGTGGTGGCTTGGAGGTGGCCGCATTGACAAGCCC  
 35 ATTCTGAAGGCCGCGCTGCCTACCACAAGTATAAGGCAAAGAAGGAACTGGTTGGCCCCGGGTGGC  
 CGGGGTGTGGCCATGAACCCTGTGAGCATTCTTTTGGANGNGGCAACCACCAACACATTNGGCAAA  
 CCGTTTATNTTTTGAANAAAAACCCCTTGTGCGGCCCGGAAANGGGGTTTTTATTTGTTGNCCCC  
 CCCGAAAAGGCCCTTTTTCNNGGGAAACCCAAAAANTGGGCCNGGAAAAAAGGAAAACCTTGGGGT  
 40 TGGGGCTTNAAAAAAAAAGTTTGGTTTTTTTTTCCACCTGGGAAAAAAGGAAAAAANCTT  
 GGGGGGGGGGGGCCCGNCCCCCTTT

CNNNANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
 CGGCACGAGGANGACATNNNACTGCNNNTTATGNGTGCNTTCCTGGCTCCTGCCCTNGGGNANGNT  
 45 GCGAATGCCNTGNANCANCTGGANCGNNATGACCGTGANCTTGGGCGTGGAGGACCATATNACACCA  
 TCNTANACNTNTATGGNGGAAGGCATGCACAAANNNNCTGGCCGACNAGGACCAGCAACAGGCTGA  
 NCTTNCNCGNACACAGGGGCGTGATACTNNCTATCTGTNANACTACACCCTACGANATGAGGTGGCT  
 CTGATCTTGAATCTGNTGCTGNACATNNGGCNGTGTNGNTTNTTATTNCCAANCTCTATNCANNNGC  
 CTNGAACTTNTTTTCACTNCATATGTTGCTTTCGATNTAATNTTGACAGCCAGTACNNGGGNCCCCGN  
 50 NCCCGTTATNTATNTCCAAAANNCTTGGGAAAAAGNGTAATTNGACCAAAAAAGGATATTTGTTTTT  
 GCTATTACACCAAATACAGTTTCANATGCTTATTGTTCTATTTTTTACCAATTTCAATTTCAAATGTCT  
 CANTGGTGCTATAATAAACTTANACTCTTCCAATAACACTGCGTTACATTCTTTGAATCCTAN  
 CCCATTTTCAGAGCAATTGACGGTGCTTACCATTAAAAAGATTACCTTNCTTTTTGAAAACAGTCAAGCA  
 AGAAATTAGAAAAGAACTTCTGTTTCAACTACCTTAACCTGGGCAGAAACATAANGAATTCTATGAGN  
 55 CCAAAAAAAGAAAAATTTGNCCNAAANGCCCAAACTTACGNTCCTTAAATATGGGTTTTAAAAAAA  
 NTNGAACGGNGGGCAAGAAATTAANAATAANTTTTNGANNNNCCNTTATATCTTGAAANTCAAC  
 TGGTTTTAAAGGGGCTTTTNTTTTTTNNGGNCATTGGNNGGCAN









GGGAAAAAATTNCNNTNCNTNGNAANCTTTCTNGGGGGGNTTAGGGGGNAAAAAAANTTTTCNTN  
TANAGNAAAAAAACNNGNTTTNACCCCTGNGNNGNTNAGGGANCCCCNGGGAANAANGNAAAACC  
CCCCNTCCNCNNTTTNGGCTAGAAAACT

5  
NAAANNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCGG  
CGGCGAGATGTCCGGAGGATCAGCTAGGAGCCTGGGCAAGGGAAGCGCCCCCGGGGCCCCGTCCCC  
GAGGGCCTGATCCGTGTCTACAGCATGAGGTTCTGCCCGTATGCCCAGAGGACTCGCCTGGTCTGAC  
GGCCAAGGGTATCCGGCATGAAGTCATCAACATCAACCTGAAAAATAAGCCTGAGTGGTTCTTCAAGA  
10  
AGAATCCCTCAGGCCTGGTGCCGTTCTGGAAACCAGTCAGGGTCAATTGATCTGTGAATCTGCCATC  
ACTTGTGAGTACCTGGATGAAGCATATCCAGGGAAGAAGCTGTTGCCAGGCGACCCCTATGAGAAAG  
CTTGCCAAAAGATGGTCTTGGAGTCCTTTTCTAAGGTACCACCTTTGATATTGAAGATTCTTAGAACAC  
AAAATAAGGAAGACTGCTCTGGCCTAAAAGAAGTAATGCATAAAGAAATCACCAAGCTAGAGGAGGT  
TCTGACTGATAAGAAGACAACCTTCTTTGGTGGAATTCTCTTTCTATGATTGATTACCTCATCTGGCC  
15  
CTGGTTTGAACGCTCTGGAAGCTCTGGAGTTGAATGAGTGTGTAGACCACGCTCCAACCTCTTAAAGCTG  
TGATGGCAGCCCATGAAAAANGATCCACAGTATCATCTCTTCCCTACTGACGTGGAAGAACCCTTT  
GAAGGGTTNTTTC AACCTCTACTTGCAGAACAGCCCCCTTGAGGGCTTATGACTATGGACTCTGATGGG  
GGACGAGTTCANCCAATGAAAAACATAACTGGANACTTTTCTTTCCCTTAATAATGAAATAAATACC  
CNTGGGGTTTTATTTTTTACCCNAAAAAAAAAAAAAAAAAAAAANCCTCNNGGGGGGGGGGGCG

AANACTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGCCTGCAGGNAGNGG  
 40 NTGTGTGATTGCGTCCCGNAANACCGGNAGCGCTTGCNCATNGNTGACCAACTGNCTGAANAACANA  
 TTGCAGAATTCNAANAANCTTTTTCACTNTTTGNCCAGGNTGGGGAGGAACTNTTACNACNAAGGNA  
 TTGGGAACNGNNATNNAANNTCTTGGGCNNAATCCCACNNAANCNNANNTACCGGACNTNANTAATG  
 AAGNGGATGCNNATGGTAATGGCACNATTGACTTCCCGGAATTTCTGACCNTGATGGCAAGAAAAAT  
 GAAAGATACCGACACGTGAAGAAGAAATTATGAGANGCATTCCGTGTGTTTGATAAANATGGTNATG  
 45 NGCTATATTAGTGCAGCACANCTTTNCCATGTGATGACAAACCTTGTNGANATGTTANCNNATGACCA  
 GGNTNATGANNTGATCGGGGACCAGANATNNNNGGTGANGGGNACNTCTACTATGGTACNTGCCA  
 CATGATGACANCNNAATGAAAACANTNTACACAATGTGGTAAATNTCTTGTANCACNATTGNACNTTT  
 GCCTTTTCTTTTGTGTGNGTAACTCATCTTGTAAANAANGTGTNCCCCTTACTGCCAAAAAAAAAAATATC  
 CCTGTNTTAGTANATTAAGGACTTCCTTTTCCCTCCATGGTGTCTTNCNNATATTNTTACTGGCCNTTTGT  
 50 CCTGGAACCTTTNTTTTTTAAAAAAATTGGNTCCANGTAACATGGTTGCATTGGGGGCTTAACTCTGGG  
 ANAATATTNTAAANCCCCCTTCTTGCCCCCTCTTAAACTTTAAAANGGAGGGNGGNTCAAANNGAAGGGA  
 ACCAACNGGGGGGNANTCCCNNTNTTTTTTTTTTTTTTTTGAANNNTNTTTTTTTTNAAAAAACNCCCCC  
 TCNTTTTTTTTTTTTNAAAAAANGNN



CAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
 CGGCACGAGGAAGACAAACCCACACGTCCCGGTGGTGGAAACACCCCATGAGGGCGCATCCTCTTCTC  
 CTGGTTAGTATTTATTTTACGACACCTGGTTAATGCGGTTTTTTATTCTCTACCTATTGCACTGTTGTGACT  
 5 TGTGCGCCATTATTTGATTTTGTACGAAAAAAAGCTTTGTTATAGAAATCAGCATACTATTTTTTTA  
 AACCTGGAGAGAAGATATTATGGTGACTGAAAAATATGGTCAGGTGTCAAATATAAATGTATAAAAGC  
 CTTCTTACTGGCCTGNCTGNCATGGTACATTTATTTTATATTTGCTGGCAATACTGAAGGGTCTTTTTTC  
 GTTTGGGNAACTCTAATTTCTATCACGGNGNCATGAATTTTTTAAAATCAGTATTTTATTACAGGTGNC  
 TCAACATTGGGNAACTAANTTTTGCCAGGACCATTATTGATCAAGCAAATAAATTCAACAGCCATTTT  
 10 GANGGAAGAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAAAAG  
 GGGNATNAANNN  
 NNN  
 NNN  
 NNN  
 NNN  
 15 NNNNC

TTNAAAAAACTGGACTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
 TCGGCACGAGGACGATTCNCTNTTTCGGNNNGTGGNTGNNGNCANGNTTNTGGANCAGGCCTTCTCCG  
 20 NCNTGGACGAGACACGGACCGCCTACATNCTCCAGGCGGTGGAGAGTGCCTGGGAAGGGGTGGACCG  
 GAAGAAAGCCACGCGTGCCAGAGACTCAGCCACGGCCGAGAACCCTAACGGGGGTGGGGCGGAGGCA  
 GAGGTGCTCANNCGGCCGCTCCTCACTCCCCAAGGAGGAAGGAGTGCCTGGGGCAGCCGCAGCCCCG  
 GNCCCAATTGTGTTCTGTGTGNAGCTGAANTCACTCATNTCCANGTGANGGACCTGCTGCCGACCTN  
 GCGGAGGGCTTATCCTGGCTTGCTGGAGCACTACAGCTACAANCCCGAGCAGGTGATCAACAACCTT  
 25 CCTGGAAGGCGGNTTGGCCCCCACCCTNANCCAACTGGACCGNGGCTTGGAACAGAGAGGTGAAGCCG  
 GACCCGACNCCCTTGNTGACGTTTNGTCACAACGTTTTCAAAAATGACAAGTTTGATGTNTTCAACAN  
 GGACTTGGTGGAACCTGACCCGGGTGGCCCCAAGGGCAGGAAGGAAGGAAGGAAGGAAGGAAGGAAGGAAG  
 CTTTGTNAACNAAAAAGCCGGGAAGGGGCCAGGGCCACNGGCAANNCTTTTTAACCANTACAANC  
 NNTGGTGGGTNGGAAGGAAGGTNCCCTTTCAACCCCGGGGGAAGGGCTTTNCCNTACCCGGGGGG  
 30 GGACCAANTTTNNNGGGTTAGNTNCCNACNNCCCCCTTTCCCATTTGGGGAACCCCGGGGGGGGCCN  
 CCCAACCAATTTCCCGGAACCTTGNANTTAAAAAANANTTTNTTTANNNCNGGNNGGGCCNTTTTNCCA  
 TTTTCCTTTAAGGGGGGCCNAAAAAACCAAAAAATTNCCCCGNGGNAAANGGCT

TTNAAAAAACTGGACTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
 TCGGCACGAGGACGATTCNCTNTTTCGGNNNGTGGNTGNNGNCANGNTTNTGGANCAGGCCTTCTCCG  
 35 NCNTGGACGAGACACGGACCGCCTACATNCTCCAGGCGGTGGAGAGTGCCTGGGAAGGGGTGGACCG  
 GAAGAAAGCCACGCGTGCCAGAGACTCAGCCACGGCCGAGAACCCTAACGGGGGTGGGGCGGAGGCA  
 GAGGTGCTCANNCGGCCGCTCCTCACTCCCCAAGGAGGAAGGAGTGCCTGGGGCAGCCGCAGCCCCG  
 GNCCCAATTGTGTTCTGTGTGNAGCTGAANTCACTCATNTCCANGTGANGGACCTGCTGCCGACCTN  
 40 GCGGAGGGCTTATCCTGGCTTGCTGGAGCACTACAGCTACAANCCCGAGCAGGTGATCAACAACCTT  
 CCTGGAAGGCGGNTTGGCCCCCACCCTNANCCAACTGGACCGNGGCTTGGAACAGACAGGTGAAGCCG  
 GACCCGACNCCCTTGNTGACGTTTNGTCACAACGTTTTCAAAAATGACAAGTTTGATGTNTTCAACAN  
 GGACTTGGTGGAACCTGACCCGGGTGGCCCCAAGGGCAGGAAGGAAGGAAGGAAGGAAGGAAGGAAGGAAG  
 45 CTTTGTNAACNAAAAAGCCGGGAAGGGGCCAGGGCCACNGGCAANNCTTTTTAACCANTACAANC  
 NNTGGTGGGTNGGAAGGAAGGTNCCCTTTCAACCCCGGGGGAAGGGCTTTNCCNTACCCGGGGGG  
 GGACCAANTTTNNNGGGTTAGNTNCCNACNNCCCCCTTTCCCATTTGGGGAACCCCGGGGGGGGCCN  
 CCCAACCAATTTCCCGGAACCTTGNANTTAAAAAANANTTTNTTTANNNCNGGNNGGGCCNTTTTNCCA  
 50 TTTTCCTTTAAGGGGGGCCNAAAAAACCAAAAAATTNCCCCGNGGNAAANGGCT

TNNNNCAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GTTCAGGGAGCTGTTTCCCGTATGTATCCTTCAGGGACCTGTGCATATATTCAAAGGGGAAGCTGTTTTT  
 55 GCTGAAAAGCTGCATTTTAACTGCATTAGTATATGTCAAAAGAAGGCGAATCTATTGAGAGCACAGTG  
 AATTTGAAGGATCTGGAGGAAAAGAAGGAAACCTTTGAATTCTCTTCTGGAATTTAAGCTATACTTCA  
 TCACTTAGATGTAAACCATTAGAGCCAGGGAAATGCCTGCTACTGGTTGAGTGCAGAACTCCTTAGC

AGAGACTGGCCCAGCTGCCTGGCACCTTGATAGCAAAAGTTGCAATTCCCTCTGTATATTTTTCCCTAA  
 CTTGTTCCAAGTCTCTCCCCTGCAGGACTTCAGAGAAGTCAATTTTCCTGTTTCCATTGTTTCTAAGAACT  
 TGTTCCTAACTCAAGGTCACAGCATTTTTCTCACTTTTGTCCTATGCTTTCTTTTAGGCATTGTAGAGT  
 TTTAGATTTTACATGGAAATCTAGAACTTATTTTAGATTAATTTCTAAGTGATATATGGATGTATGGAA  
 5 AGTTTTCTGGTTTGNTTTTTGCTTGNGAAGTATTCAATTGGTTTTGCAACATTGCTGAAAAAGACTATT  
 CTTCTTTTCTACANTGGNCTTTGCCCTGGGTGGCNACAATTATTCCTTACCTGCCCTGGGTCTATTTTC  
 CGGGGATTTTCCNATTTCCTTTCCCTTTNAATTTAATTNAATAAATNCTTGGGGCTTACCAACATTCCNC  
 CATGGAAAANTTTTNGNAAATCCTAANGGGGNCCTTTTAAAAAAAACNTTNGGGAAATCNCCANGG  
 GGAAAAAANNNAATTCATTGGGGGGGGGCCNTTTTTTTAAAAAAGGNGGTTTN

AANNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGTGACC  
 GGCAAGACCTCACCTGGAGGTGGAGCCCAGTGACACCATCGAGAACGTCAAGGCCAAGATCCAAGA  
 CAAAGAGGGCATCCCCCAGACCAGCAGAGGCTGATCTTTGCCGGGAAACAGCTGGAAGATGGCCGC  
 15 ACCCTGTCTGACTACAACATCCAGAAGGAGTCCACTCTGCACCTGGTCCTNCGCCTNAGNGGNGGGAT  
 GCAAATCTTNGNGANGACCTTGACCGGCAAGACCATCACCTGGAGGTGGAGCCCAGTGACACCATC  
 GAGAACGTCAAGGCCAAGATCCAAGACNNNGAGGGCATCCCCCAGACCAGCAGAGGCTGATCTTTG  
 CCGGGAAACAGCTGGAAGATGGGCGCACCTGTCTGACTACAACATCCAAGAAAGAGTCCACTCTGC  
 ACNTGGTCCTNCGCCTAAGAGGNGGGATGCAAATCTTNGNGAANACCTTGACCGGCAAGACCATAACC  
 20 CTGNANGTGGAGCCCAGTGACACCATCGAGAACGTCAAGGCCAAANATCCAAGACNNAGAGGGGCAT  
 CCCCCAGACCAGCAAGAGGCTGATCTTTGCCGGGAAACAGCTTGGAAAGATGGGCGCACCCCTGT  
 TTTGACTACAACNTCCAGAAAGAGTTCNACTCTGCACCTTGGTCCTTCCGGCCTTAANNNGGNGGANTG  
 CAAATTTTNCNGGAAANCTTGGACCGGGNAANAACCATTACCCTNGATGTTNGANCCCANTGGCAN  
 CCTTTNNGAAACGTTAGGGCCAAGAATCCCAGNAGNNNGAGGGNNTCCCCCAAACCCNNCAAAAN  
 25 GNTTNAATTTTTCCNGGAAANNANTGGAANATGGGCCCNCCCTTTTGTATTNAACATCCAAAAGAAN  
 CCCCTNTTNNCTTTGGTCCTTGGCNTTAANGGGAGGGGGTTNAANTTCTCCCTTAANNTTTNAAN

GGCCGNTGTNNNNNTCNTTTNTTNTTNNATNNANTNNNNNNNTNCCCCNCNCGNTCGGCNTGCACTCN  
 30 GNNTGCCNNNNNNNCCCCCTNNGGGNGANNCGNCNNNNNNNNNCCTTNGCCCCNATAGTGGGGT  
 CCTATTACCAANGGATTACANTNTCNACNCGCNGGTTNNTCCCCGTCCCGTCTGNCNNANTNCCNNN  
 NTCNTNCCNNNTTCNNNACCCNNCNCNNCNCNAGTNCNNNAACGCGCGGGGGTCTNCCGACCCAGN  
 CNNTTNNCTGCCNCNCCACNNGNCCACNAGNCCCGNNTCNCTCCGTNTCTNCCCTNCCNNNNNGCN  
 35 GNGCCCCCNNNCNCNNCCNNCNCNATACANCCACNNGNCCNNNNNNNTNCCNCGNNTCTTTCGNC  
 GCNNNCNCCGGGGACNCTNNNGCNGNCNCCNCCCCATTCCTTNGNGCCNCTNNGCCCCGNCCNTCC  
 CTACCCCTNNGCGCGNCGNCCNCCNCACTCNCTTATCTNCGNCNCTCGNCTCANNCNNTTCTCC  
 NCNTTGCNCCCCCGTCCGNCNNTCNNGCCNNTTNCNCCCTGNGCNCNCCNNTCGTGNTTCCNCCCT  
 TNNCCCNCTNTCNCNNNGTCCCTNNGNCNCCNCGCCNNNTCCNCCGGANCCCCNANNCCNCGNG  
 40 CTNCCNTCANTTCNNTCNNNCCNCCCTAGANCNTCCANCCCCCTNTCNNTATNCTCGCCNCTCNTTCT  
 CCACTCTCCCTCGTCNTNCCCTNCCCCNTCNTNACCNCNNCCGCCCNCGTNTCACCTTGCNNCCNCGT  
 TGTCCCGCCGCACNCCCCCGNACGNCTNGNCCNCCNNTTCTTNCGCCGTCCCGCNCAGNCAAGTGCC  
 CTNCCNCCNCGAGCGGANCCNNNANCCCTCCTNGNNTCNCCCGCCTGTCTCNTGTCCNCCNCCNCGN  
 CCNCGGNCNCCCTCNTCCNCCNCCNCGNCNTNCCNTTNNNCTCCGCGGTCTCCCNCCCTNCCCCCN  
 45 NTNNCNTCCNGCCCTCNTTNNCCNCGNTCCCATGTCTTCCNCTNCCCNCCCNNTNATCCNCGTGCTNT  
 CNCNNGNAGCNCNCTCNNTNACTGATCCNNGCGTANCTGTGNCNTTCTNCCNCCCCCNCCNNCG  
 TNCNCGCNTCAGTNGCCNTCNTNCCCTCCCCNATCNCNCTCTCNGCTCCCTCTCTCNCCTCCCTNCGA  
 CCNCTCTNCCNTACACNGCGGCTTNCNCCGNNGTNCCNCCNCCNCCNNTANCCCCCNNTTNNCCTC  
 NCNCTCNANCTCGNACNNTNACTCCNCCNCGNNTACCTCGTCCNCCACCTNCCNCGCTGCNTCG  
 50 TCCNCTCCNTGGCTCNTCGNCTNNAACCTCCNGCAGTCCCGCNCNCCCGTGGNCTCTTCCNCGANCCN  
 GCNCCNCCNCGAATNCGGNCNCACGCNCCNCGACGGATGNCAGGTANGTNGCNCNTCCGNCNGN  
 ANNTCCNCCNCGATCGNCCNCCNCCNCCNNTATGCGAGNCCCTCCCCGANGTNCNCGNCCGCTNCN  
 GACGTGNCNCCNCCCTGNACGTAGCNCCTNACCCTNTCTTTCTCCCCCNAGGGTCCCGCCNCTCCC  
 GCCCCGCTNCCNATCGGTGCTCCNTCCG



AAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
 CGGCACGAGGGCGGTGACGGCCGAGGCGACAGAACCAGGGGGCTGTCGTTGGTGGGCGCTCCAGGGC  
 TCTGAACGAGAGAAGCGTGACCCGGAACGGAAGCGAGTCCCCATCCCAACTCCGCCAGGTTTCACG  
 CTAGCCCCAGGCTTACTGGTAGGCTCCTGCTGCCATGGACCTGTTGTTTGGGCGGCGCAAGACGCCAG  
 5 AGGAGCTGCTGCGGCAGAACCCAGCGCGCCCTGAACCGGGCCATGCGAGAGCTGGACCGTGAGCGACA  
 GAAGCTCGAGACCCAGGAGAAGAAAATCATCGCGGACATCAAGAAAATGGCCAAGCAGGGCCAGAT  
 GGACGCGGTCCGGATCATGGCGAAAGACCTGGTGGCGACCAAGCGGTACGTNCGAAAGTTTGTGTTG  
 ATGCCGGCCAACATNCANGCTGNGTCCCTTCAAGATCCANACACTCAAGTCTAAACAACTCAATGGCN  
 CAAGCCATGAAGGGCGTCACCAAAGCCATGGGCACCATGAACAGACAGNTGAAGTTGCCCCANATCC  
 10 ANAAGATCATGATGGAATTTTGAGCGGCAGGCAAAAATCATGGGNNTTGAAGGAGGAAATGATGAAC  
 CAACCCCTTCATTAACCCNTTGGGGGACCAGGNCCATTAAAAAGGGAAAGTGNTGCTTTTGTAAAC  
 CCCAGGTNCTTGGACNAACTTGGGGGTGANCCTGAAAAAATGAACTTTTAAAAACTTTCTTTTCACC  
 GGANGGTTTCTTTAACGNNGGNTNGCCCGNGGNAAAAAAACCAGGGTTTCACCCTTTTGNCCTT  
 GNGGGANCCCNAAACCCNAACCTTGGGNGGGNAAGGTTTANNAACNNTTTNAANGGGAATTAATTT  
 15 GCCCNTTTTTTCCCCAAGG

TTNANAAANCTGGACTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCA  
 TCAGCAGCTCAGGCCCTGCTGNGACCTACCGACCCTACGACGAGGGTCTGAGGCGGNGGGTCTTCATC  
 20 ACCAATGAGACTGGGCAGCCACTGATTGGGCAGGTGTGGCCCGGACTCACCGCCTTCCCCGACTTCAC  
 CAACCCCGAAACTCTTGACTGGTGGCAGGACATGGTGACCGAGTTCCACGCCCAAGTGCCCTTCGATG  
 GCATGTGGATCGATATGAACGAGCCATCCAATTTTCGTGAGAGGCTCAGTGGATGGCTGCCCGGACAAC  
 AGCCTGGAGAACCCGCCCTACCTGCCAGGGGTGGTTGGCGGGGACCCTCCGGCAGCCACCATCTGTGC  
 CTCCAGCCACCAGTTCTGTCCACGCATTATGACCTGCACAACCTGTATGGCCTGACTGAANCCTTACC  
 25 CTCCACAGGGCCTTGGTGAAGGTTGAGGGATGCGTCCNTTTCGTGATCTNTCGCTNAACCTTTGNTGGC  
 CACGGCCGATACTCCGGCCANTGAACAGGGGATGTGTGGACAACTGGAACANNTTCTTACTCCGNGC  
 CAAAAATCCTGNNTTTAATTTGTTGGGGGTGCCCTGGGAAGGGCTGACATTTGGGGNTTCTTGGA  
 ACACTTNAAGAACTGNGTTGCTTTGAACCAANTTGGGGGGCCTTTTTACCCCTTTTTTGGCGGAAA  
 CCAAATTGCCCTGAAAAAGCCANCCCGAAGGNAACCCGTANAAGGTTTAANNGAANACGGGNCAA  
 30 CNAAGCCTTGAAGGAAAGGGCNTTTAACCCCTTGGGGTTNAGGGGTTAATGGGCCTTATTTTTAAACCC  
 CTTTTTCCCAAGGGGNCCCCCNTTTAAAAAGGGNAAAAAAGGGGGCCCGNCCCCCTTTTTTTTGGGA  
 NT

TTGANAAAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 CATCAGCAGCTCAGGCNCTGCTGGGACCTACCGACCCTACGACGAGGGTNTGAGGCGGGGGTCTTCA  
 TCACCAATGAGACTGGGCAGCCACTGATTGGGCAGGTGTGGCCCGGACTCACCGCCTTCCCCGACTTC  
 ACCAACCCCGAAACTCTTGACTGGTGGCAGGACATGGTGACCGAGTTCCACGCCCAAGTGCCCTTCGA  
 TGGCATGTGGATCGATATGAACGAGCCATCCAATTTTCGTGAGAGGCTCAGTGGATGGCTGCCCGGACA  
 40 ACAGCCTGGAGAACCCGCCCTACCTGCCAGGGGTGGTTGGCGGGACCCCTCCGGGCAGCCACCATCTGT  
 GCCTCCAGCCACCAGTTCTGTCCACGCATTATGACCTGCACAACCTGTATGGCCTGACTGAAGCCTTA  
 GCCTCCACAGGGGCCCTGGTGAAAGCTCNAGGGATGCGTCCCTTCGTGATCTCTNGCTCAACCTTTTGC  
 TTGGNACAGGGCGATACTTCCGGCCACTTGGACAAGGGGAATGTGTGGAGCAACTGGGGANCCAGCT  
 TTTCTACTCCCGTGCCANAAAACTCTGCTTTTAAATCTTGCTGGGGGTGCCCCNTTGGTAAGGGGGC  
 45 TGACATNNTGGGGCTTNTGCGCAACACCCCTNAAAGAACCTGTGTGTTTNTTGGACCCCANCTNGGG  
 GGCCCTTCTACCCCTTCATTGCCGGAACCCCAAATGCCCTTNAANAGCCAGCCGGAAGGAAACCG  
 TACAAGGTTTNAANGNAAAANGGNCCANAAANGCCATTNNNGNAAGGGCCTTTAAACNTTGGGNC  
 TTANGGNCATTGGGCCTANTTTTTTACAAANTTGTTCCTCAANGGNCCCCCNTTTAAANGAGGAAAA  
 AAGGGGCCCNCCCCCNNTTTTTTGTGGGTACCCCCCT

TNNNACAAAACCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGC  
 CGAACTGACCCAGAGAAGGGCAGTGTGCTCTCGGCGGCGCTGCAGAAACCCCCACCCAAGACGGCTC  
 CCCCTCCCCGGGCCTGTCCCTCTTGCCCGGAGTCTCTCGCCTCGTAGGCCTCTCGGATCGTATATC  
 55 GTGGGGTGAGGTGAGAGCAGGCCCCGGGGAGGGTGGTTACCGCTGAGGAGCTGCAGTCGCAATCAAGA  
 TGATAGAGGTACTGACAACAACTGACTCTCAGAACTGCTACACCAGCTGAATGCCCTGTTGGAACAG

GAGTTGAGATGTCAGCCAAAGGTCTGCGGCTTGAGACTAATTGAATCTGCACATGATAATGGCCTTAG  
AATGACTGCAAGACTGAGGGACTTTGAAGTACAAAGATCTTCTTACTCTAACTCAGTTCTTTGGCTTTG  
ACACGGAGACATTTTCTCTAGCTGTGAATTTACTGGACAGATTCTGTCTAAAATGAAGGTACAGCCC  
AAGCACCTTTGGGTGTGTTGGACTAAGCTGCTTCTATCTGGCTGTAAAATCAACAGAAGAGGAAAGGA  
5 ATGTCCCATTTGGCAACTGACTTGATCCGAATAAGCCAGTACAAGGTTTACGCTTTCAANACTTGATGA  
ANAATGGAAAAANATTGTATTTGGAAAAAGGTGTGTTGGAAAAAGTCAAAAGCTTACTACTGGCTTTTA  
AGTTTTTTTACAGGCTNTTATTACTCACTTCCCTTTTNAAAAAAACGTGCCCCANTGNAAAGGGAAAA  
AGTNNCCTTTAATTTTTTGGAAAAANACTTAAAAACCCCAACNTTTAANGGGCATTGCTTACTGGGANGG  
AAATAATNNTTTTTTTTTNAAAAACNAAAGCCCCNTTTNGGGGNGGGGCNTTNGGCNANTNANCC

GAGCCTATANNGAGNCGNATTACAGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGT  
CCGGCAGCTCCGGAGGCTTTTTGCCAGCTGGCTGGAGATGACATGGAGGNCANCGCCACAGAACTCA  
TGAACATTCTCAACAAAGTGGTGACCCGACATCCTGATCTGAANACTGATGGCTTTGGCATTGACACA  
15 TGTCNCAGCATGGTGGCTGNAATGGATAGGGACACGACTGGCAAACCTGGGCTTCGAAGAATTCAAGT  
ACTTGTAGGAACAACATCAAANAGTGGCAGGCCGTATACAAACAGTTTGATGTTGACCGNTNAGGGA  
CCATNGGNATGCATGTGAACTCCCCAANGNGCCTTTTGAGGCAGCAGGATTCGCGCTGAATGAACA  
TCTCTACAACATGATCATCNCGACGCTACTCANATGANGGGAGGGAACATGGATTTTGACAAATATCA  
TCNAGCTGCCTNGGTCANACTGGNATGCCATGNCCCCNTNCTTCNANTCTCTCGACAAAAGANTGGC  
20 ACCTGGACAAATCCAGGTGANCTCCNTNGAGTGGCTNNAANCTNGNCATGNTACTCCNTGAAACNNG  
GAGCCCCAANGNCCTGCCCCNCTCATTNCCTTTGCTGGNNGGAGTCCNCCCTTNGACTTCTTCGGNCCC  
CCCCCANGGCNTNATTTCTTGNNTGCAAGTNACAATCTCTCNAGGGGTCTNCTGCCNNAACCCCTTTT  
NGNCTNTTTAANCCNTTNGCCACCTNGTTTTTTCANNTCTACCANCACNNGGNCCCAANCNTGGNCTTT  
TNNCACTGCCNTGNCCCCCTNNAANTNCCNCCCTCNACGCACAANCCCATCTTGNTTTANCTTCCAN  
25 NAACCTTATATTTGCACCCNGTTGNCANNCCCTCCACAANCTCGNNGTGTTTCTNCCCCNCCCAGGG  
GCCNCTNNTNCTNAACTTCTNTGNAAGGAATAATNNTNNTNCCNTTGTNNCTAAGGCNCTNCTTTT  
TNTCTTTCCACTCTCCNNTCTCNNTNCATCTNTGCCANATATNTTGTGCCCTTNCN

CCCCCNNTTCNNNNGNAGANGTNTNNNNGNTANNNNTTNNNNNGACTCNNNNNNNTCCCNNTCNNT  
NCCTNGNNGGGAGGNNNCNNNNCTNNNNNNNNNCNAGGGGNAGNTNTGNATNNANANNNNNNNNTTNN  
GGNCTTATATGAGTCGTATTACAAANGNATNACACTCCCNCCCNNGNGGCTCTNCNNANACACGGCCG  
35 NNANTCNCTCNCNNATTTTATTTTNNCNCGNNTCCANTNNTNCTNCCCNCTCGATGGNNGGCCNT  
CCNTCGCNNTNGTCNCTATNNTTNTCTTTCTGNTNNGATNNCTCNNNACCNTCNAGACNNNNANTCTNT  
CNAGGNGNCTANNCCNCTGNTNNAACANTCACCTNGCTNCCCCGNTNACGANTNGAGAGNTCT  
ACCNNNCNNGNANNCTCNNANNGATCCCNCTGCCTNNNTNGNCCAGTCNCACNCTANTCNNTN  
CCGGCNTCCCNNTTNTCTCTNNNNNNNCNCCNACNNGTGNTNCCGTTTNTNNTNCCCGCNTNNCNAGN  
TGANANCCCNNTNANNNTCNCTGNGNNCNACNNGNCCNATGNNGACNATGGNNCNNTCTTTAG  
40 AGNCGACTCCCANNCNNNGNCNTTTGNANNTCNCNCCCNNGNTGATNTANNNCTNTTNNCTNNNC  
NCCGNCCCCCTANNTACNCTTACGANTCGNNNANNAANNCTCNNACTCGNCGANNCCGTCNGTNTANT  
NNNCNGNCCNCCNANNTTNNNGNCCCNAGCTTCACGTNTACGAGANNNCNNGCCTNNTTGANTCCN  
CANGTCNCCNCCNCCNCTAGGTNTNTCTNNGACCGCNGCTNANCCCNCTANGANCNCCNNGAGNCC  
NTGNTNCGTNTCGCNCTTCCNTNNNNNANNNNTGTNGTGCNACNANTGANTCCCNNTNCCNCCAT  
45 CNTANTATGANNCTNCTTCCNCTNCCNCTNCCNCGCTCCNCCCNCTGTCNNNCGAGAANNCCCTCCCTGG  
TTCNCTNTTNCNTCGANTCCAATNNNNNGTCCNNANNTANNCCNNTNCTGTNNACNNTNCGATCCNC  
CTATNTGTCCTTCCNCTACTNACAGCCTGCTNNTCCNCTCATGCTCCACCACGNNCCTNNTNNA  
GTGTGNTNCCNCCATCNCNTNNAACNNTTCCNNAACCTTNNNCGCCTNNGTCTCCNACANGGATNCC  
CGGTNACGNCNCCGNNACGCTCCTNCTNCTTCCGATTTNCTCNGNCCCTTANCTNNTNCTNCTTCT  
50 ACTCTCTGTCCTTATGCCCCTNATATNCCNCCAGGNNGGANNNTNGNCNTCACGNCCGNCCTGNT  
ATTNCTCTGTGTCNCTCGGCACNNGANNNTACGCATCCNCGNACCTCCNATGATCACTNNGNTCTGTC  
GNNCCCCCGCANGCGTNTCGCNACGTNTCGNTATNTCTGCGTTAGTCGCNNTNCCCTGGNTTNTCTCC  
ACTCTGTAAAGNACGCTCNCNGTTNNNGTGCTCCGTATCTTNGNNTCTCTTNNCCCCNCCNCCNCCN  
CNNANGCCANGCGNCGATTGNGTGTTGNGCTNCCGAGNTAGNCGCCNCCCNCTCACCNNTNANNGA  
55 NNNNCNCCNCCCCCCCCNCAG

GCCCTATANNAGNNGTATNACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAA  
 TTCGGCACGAGGCCGCTCCCGAGCGCGGCGGCTCGTCTCTAGGCCGTGCAGCTGCTGCCACCGCCGT  
 CTGTCTGCCTGCCCTCCCGTCCGTCCACCCGACGATGAGCGGCCTGCGCGTCTACAGCACGTCGGTCA  
 5 CCGGCTCCCGCGAAATCAAGTCCCANCAAGANTGAGGNGACCCGNATNCTGGATGGGAAGCGCATTCA  
 NTACCANCTAGTGGACATTTNCCAAGANAACGCCCTNNGGGANGAAANGCNANCCTTGGCCGGCAAC  
 CCCAAGGNCNCCCCACCCCAAANTGNCAACGGGGGACCANNATTGGGGGGACTATNAACTNTTCGTGG  
 AGGNTGNGGAACAAAACACACTGGAGGANTTCCTGAAACTGGNCTGAACCAANTCANCCCCCTGGAC  
 TTTGTCATTACATTTCCCTTCCCAGGCATTACCCCGGGCATNAAGGACCTTGTGACCAACTTNCCTGTG  
 10 TATTCCTAACCTGAACGGGGGGGNGCTCTCCCTCAANCCAAAGANCCCTTTTCNTCCCCTAANTGTAA  
 GCCCCCTTCTTTTTTATTTAGAAAGNAANATTTNCTCNCCCACCGGGGCTCANAAAATTGTGNTTANAC  
 AAACANACCNAATGGCTGGNNTGTTNCTCANANTCGGGNCCCTGNGGGTTGTACCCCTTGNCTGGGN  
 CTTGTGTGATGGGGCACCTTTTNTTGATNTCCATTTATACAAAGNNTTNTNAAAAGGGCCCNCAATAC  
 CCCTTNCGGGGNGCACCCCCAGAAAAAATNAAANGTTGCCNTTTNCATTGNGANAAAAA  
 15 AAAAAAATNNGGGGGGGGGGGGGGGGCCCAAACCTNNNNNTNNTNTTTTTTTNGNGGGGCTNTAAATNN  
 NNCN

GGNGGGNGGGGNGCGNAAGGAAATNTTTTATTTNNNNNTNTNNNNNTTCNCCCNCTANTTTAGTCNT  
 20 AGNGNNGNCANNTTNTNTTTTCNTCNGGGANNCCANTAGGAACTCCCCCNNTTGAGNCNCNNTGGA  
 GNNGCATTACAGGGGNGGACGCTCTNCAANTAGTGGCTCCCTCCGTTCTTGNTACGACTNNNCCCN  
 CNAANNGTTGTTTTNTNCTCCNTCTCTATTTANNCNTCCNNNGGGGGNTTNTNTNTTTCTCCC  
 CTCANTNTTATCNTTTTNCNNNGTTNTCGGTTTTCCCGATTNATTTTTCCNATNNATGNNTANATAAT  
 CNANACGGACCTTNTGTTTTNTNTTNTCNACNTCNTATTCTNTACCAGNCNCNTTNTTTNNNTTTN  
 25 TTCATATATTCCTNCTAATNNNCNNANATTNNNTCTCGTTGNTGTGCCTNCTCTNNCNTCTTNC  
 NCNTNTANCNNNTNTCNTNTCCNCGTGCCTGTGAGTTANCNCNNCNANCNGNGTNTTTATANCNTNTG  
 TGNCTNTTACTNNACGANNTGTTNCTNNGTNNNNNTTNTTTTCNNTNTNCNTNCTNNTCTTTCGNGA  
 NNTNTNNNTNTCTCTNTNGGTTAATGAANCTTNTCTGNNTCTCGTTNTNTCTCNANNTTCNNNAN  
 TGTCCGATGNGNNTNTATNCGTNTATCTCNNNGCNTNNCNANNNNCNATGTTCTANNAATNTTTNNN  
 30 NGTNATGNNCNNNTNCGNNAGNNNTNNGGNNCTTNTGGTTTANNTTTTCTNTNTNTNNTNATCGTNTNN  
 CGTGTTCNATCCTNGTACNCTNATCTTTTGATANNNTCNNNGTTNTTTCGNTTCGNNNTCTCTCATGNT  
 TNCCCATNANGCAGCNTCTGTCTATNTNCNCTNGTNCNTNTTNGNTCTACNGCACNGNTTANCANNC  
 NTANTTCTCCTACTCGCTCCCNNTNTNTCNTTTTNCNCCCTNNAATCTCNCTNNAGAGNTCTCTCN  
 NTCNNTNTATNTNATTANGNTNTNGTNTTANTNNTCTCTCNCTNNNGAGACNCTCTATGTGGCNTTC  
 35 NTGTAATNCTCCCNNTNATATANTATNTNTTANGACACTNTCTCTNCTCNNTNTATCTANNTCTAACTN  
 TCGNTCGTCGTTNNNTCNTGANNCCCTANGTANANNCCGTTGTNCGNGNCGCTNTAANGNTNTNNTC  
 TTCTAGNCCGGCTNNTCTCTNACGTACNTTTGTAANANTANTNANTNATGGAGTATTCTCCTTNTCT  
 AGATCGATCCNCCGTACGTNNNTAGCTATNTTCTGTANCACNTAANGATGTCTTNNCGCTNGTGTNNG  
 NNNTTNGTNTNTNANGTGTGTNTNTNGCNTNTGAGTGTACATANGTATGTTCAATCTNTNTTTCGTACN  
 40 GTATGNNACTTNCGTGAANNNTCNACGANACNTANNTACGGACAANGTNNCANNANGTANCTNTNNG  
 TACTTACTNTTTCGNANTGNTACGGTCCCTATCTATGNATGNTNTTTCGTCGTGTNTNGTNTCTATATN  
 TCGNNTNGGTAGNGGCCG

GGNGGGNGGGGNGCGNAAGGAAATNTTTTATTTNNNNNTNTNNNNNTTCNCCCNCTANTTTAGTCNT  
 45 AGNGNNGNCANNTTNTNTTTTCNTCNGGGANNCCANTAGGAACTCCCCCNNTTGAGNCNCNNTGGA  
 GNNGCATTACAGGGGNGGACGCTCTNCAANTAGTGGCTCCCTCCGTTCTTGNTACGACTNNNCCCN  
 CNAANNGTTGTTTTNTNCTCCNTCTCTATTTANNCNTCCNNNGGGGGNTTNTNTNTTTCTCCC  
 CTCANTNTTATCNTTTTNCNNNGTTNTCGGTTTTCCCGATTNATTTTTCCNATNNATGNNTANATAAT  
 50 CNANACGGACCTTNTGTTTTNTNTTNTCNACNTCNTATTCTNTACCAGNCNCNTTNTTTNNNTTTN  
 TTCATATATTCCTNCTAATNNNCNNANATTNNNTCTCGTTGNTGTGCCTNCTCTNNCNTCTTNC  
 NCNTNTANCNNNTNTCNTNTCCNCGTGCCTGTGAGTTANCNCNNCNANCNGNGTNTTTATANCNTNTG  
 TGNCTNTTACTNNACGANNTGTTNCTNNGTNNNNNTTNTTTTCNNTNTNCNTNCTNNTCTTTCGNGA  
 NNTNTNNNTNTCTCTNTNGGTTAATGAANCTTNTCTGNNTCTCGTTNTNTCTCNANNTTCNNNAN  
 55 TGTCCGATGNGNNTNTATNCGTNTATCTCNNNGCNTNNCNANNNNCNATGTTCTANNAATNTTTNNN  
 NGTNATGNNCNNNTNCGNNAGNNNTNNGGNNCTTNTGGTTTANNTTTTCTNTNTNTNNTNATCGTNTNN









NTNANNNTTTTTNTTNTNTNCNTTANNNAAAAAAAAAAANNNNNNNNNNNNNNNNNNAAAAAACNGGNNNN  
TNNTTTCCTTNNNANGGGNNTTNNNNNCCANCT

5 TTNNNATAGNGAATNGNTANGANNCNACCNCTNNNCCTTTGAGCCCNATAGTGAGTCGTATTACAG  
GGGCGGCCGCTCTANAAGTAGTGNATACCCCCGGGCTGCATGCTCCCNCCGTTGCNCTCTTTNCNG  
CTCGCCCCCTGTCCNGCNCCCCCGGGNTNTCCNCANCNCATCCCGTNTCTATCCCNANTCCANA  
GANANANTGANNTTCNCTTGNATNAACGAGGAANCA TNTNGTCCTAAAAATCTTTCCNTTNTNNTNGN  
CCNNANNGAATNCTNANTNAANTANNNTAGNACTCGGGCTNCCCGGCTTATNTATNNTAAANANGC  
10 CNCCTNNCCGCTNCNNCATATGTTTNTCTTACCACNNNNANTNTCTCCTTGNTNCGTTCNNNGTNN  
CGCCCCANNTCNGCNCTNCNNACTAANCNCCNAANNCCNTNNNNCNNCATTCCNNNTAACNANGCC  
CTANGAACTNTNTNNTTNTCTTCTATCCNNCACACCACCCNTTNATTTCTNGCTTCACTNNNGGCCNCC  
TNTTCNAGNTTCATAATTNTTCTTNTGTANNCTCCCTGCNAANCCAAAAANTNTTNTTNTTCTTTCN  
CCNTCCNNANANCTNNTTNATANCATCTGCCANNGNCNCTNCGCNAANTCTGCNCTCTCTNNTNTNA  
15 TNTATGCCNGNATACCTTGTNCTGCTCATAATNATNATANNNTTNANATNNNCCCTNTNATTTTCTCNA  
TCCNGTCTCCTANGCGNNNCTTAANACANCACNATTNATTTTCNCCCNCCNNTCCTCNCTCTCCCTC  
CCTTTCTNCNNNCCNCCCNCCACNCTTTCCCTTTCTNTTTCNTCCACGCCCCGTCNNTCCTANNTA  
CTNNGCNCNCTNNTTNANCTCCNNCCCNCCCTCNNTCTTCTTNCNCTNNTCTTNTNTCACNENAT  
ATAANCACNNTCATAANTCTTACAGNTCCCTNAAAGANTNTCACNCTCATATCTCTNTCNCNNTCCTCN  
20 NCNANTCCNTATCANNGCGGCTNCTTTATTTGAGTTAATTTGTNTTGTNTCNTANCCGTTNTNGNNCN  
TNTTTCCNGACNCGNNNNCCNNTCNCNCTNTANTNCGCNCTNCTCTTATCTANTTCTNTCNTCAC  
CTNANNNTCNNACCNCACCTCCTCAGNTCNACCGTNNCGANNNTCGCNCTCATTANAGAGNGCNC  
G

25 TNAGNCCTATAGTGNNGTCGTANTTANAGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGC  
AGGAAATTCGGCACGAGGGCGTGACGTGCNNTNGCCGCCACCTGGTNNNCATGGGNCANCACTTCCT  
GTTAAGANAANCCACNANGTGGAACGGNGACGANNTANACTNNNTNATCNGCTNTNTGNCAGGCTGT  
30 CANGAANTCANATAGGAGTNCCGTNCCAGNACATCNNCNTTCNNNNNTGCTGNTGNTNAAACNANG  
ATNNGTTNAANAGNGNCNNNAACNTNTAGCTGGGGGCACAGATTANNATCTANTNTGNNTTTNANCN  
GCTCNCGGACNCTTANNNGAAGGNCNGNNCANGACNCTTNTNCTCCNGANNAGCAGACCCGCACC  
NTTTANACAGAGGGTCANNAACNNATANNNTTNTGTTGTGTTGANACNNGAACACCNACCTCTTTNN  
CNGNNGCCGCAGANCCNCAANACTNTTGTTCGTNTGNNCNGTANCNCCCCCTCCTTTNCANNNAGG  
35 GCATNNNAGCANAACTANTNTTGTGNNNTNAAACNTGGGTGNCCNCTCNCTCTTTNNAACAATTAN  
GTGNTNACAACTGNCTTCNNTTCTAAAANTNNNNCNTAANCACNAAGANTNNGTNNNTCNATATNN  
NTTGTCTCNNTTNTCTCTNNCANANNNGATNTTNTCTTTCNCTCNGTCTNTNCTCNCNNTAATTTANN  
TAAAATTTNCTCNTGNTTATACNAATTTTNTCTTNTNNNTGGCNGGCTNNAANCTCCCTNGAACTTNT  
NTTNANTCNTTTNTNNTNACNTCNNTTNAACACTCTTNNNTNNNTTCTTNGGTNTTANNNTNNTCTNT  
NTTTNANCTTGTNNCTAGAGTTTTCCCTCTATTCTTTTTTATNTANANNTCTNNGTCTATTTGNGTNC  
40 GNGTCTAGNNNTNNAATTNTCTGTNCTCCANTANACTNANANGACTNTTNTCTGTTCTNANCTATTT  
TCTTNTNCNATCNTCATCCCCG

45 TNAGNCCTATAGTGNNGTCGTANTTANAGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGC  
AGGAAATTCGGCACGAGGGCGTGACGTGCNNTNGCCGCCACCTGGTNNNCATGGGNCANCACTTCCT  
GTTAAGANAANCCACNANGTGGAACGGNGACGANNTANACTNNNTNATCNGCTNTNTGNCAGGCTGT  
CANGAANTCANATAGGAGTNCCGTNCCAGNACATCNNCNTTCNNNNNTGCTGNTGNTNAAACNANG  
ATNNGTTNAANAGNGNCNNNAACNTNTAGCTGGGGGCACAGATTANNATCTANTNTGNNTTTNANCN  
GCTCNCGGACNCTTANNNGAAGGNCNGNNCANGACNCTTNTNCTCCNGANNAGCAGACCCGCACC  
50 NTTTANACAGAGGGTCANNAACNNATANNNTTNTGTTGTGTTGANACNNGAACACCNACCTCTTTNN  
CNGNNGCCGCAGANCCNCAANACTNTTGTTCGTNTGNNCNGTANCNCCCCCTCCTTTNCANNNAGG  
GCATNNNAGCANAACTANTNTTGTGNNNTNAAACNTGGGTGNCCNCTCNCTCTTTNNAACAATTAN  
GTGNTNACAACTGNCTTCNNTTCTAAAANTNNNNCNTAANCACNAAGANTNNGTNNNTCNATATNN  
NTTGTCTCNNTTNTCTCTNNCANANNNGATNTTNTCTTTCNCTCNGTCTNTNCTCNCNNTAATTTANN  
55 TAAAATTTNCTCNTGNTTATACNAATTTTNTCTTNTNNNTGGCNGGCTNNAANCTCCCTNGAACTTNT  
NTTNANTCNTTTNTNNTNACNTCNNTTNAACACTCTTNNNTNNNTTCTTNGGTNTTANNNTNNTCTNT

NTTINANCTTGTNNCTAGAGTTTTCCCTCTATTCTTTTTTTATNTANANNCTNNGTCTATTTGNGNTNC  
GGNGTCTAGNNNTNNTATNTCTGTNCTCCANTANACTNANANGACTNTTNTCTGTTTCTNANCTATTTT  
TCTTNTNCNATCNTCATCCCCG

5

TNNNNNAAAANGCTGGAGCTCCACCGCGGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGC  
AGGAATTCGGCACGAGGGTGATCTTACGTCTTTTTTAAAAGCCCTGCTGCTGCTGCTGCTGCTAGTCGT  
GTCTGACTCTGTGCGACCCCATAGATGGCAGCCACCAGGCTCCCCCATCCCTGGGATTCTCCAGGCA  
AGAACACTGGAGTGGGTTGCCATTTCTTCTCCAATGCGTGAAAAGTGAAATTGCTCAGTCGTGTCCG  
10 ACTCTTCACGACCCTATGGACTGCAGCCCACCAGGCTCCTCTGTCCATGGGATTTTCCAGGCAAGAGTA  
CTGGAGTGGGTTTAAAAGCCCTAGGACTCTAGGAAAACCTCTCTCTCATCTAGTGTGGAAAGCTTATT  
AAGAAAGGAGTGAATGAGCCTTACCAGATGGTTCACAGGTGGTGCTAATGGTAAAGAGCCACCTA  
CCAATGCAGGAGACATGAGAGACATGGATTTCGATCTCTGGGTGGGAAGATCCCCTGGAGAANGAAA  
TGGCAGTCTACACCGGTATTCTTGCTGGAGAATCCCATGGACAGAGGAGCCTGGNGGCTGTANTCCA  
15 TANGGNCACAAAAAAGTNTGAAGTGACCTAACATACATGGGAGNTAACAGGACATTTTAAAGAAAAAA  
GGAAAAGCTTAACCNAAAGGCNGGCTGTNCAAATCGTGAGAAACTTNCCCNAAAGTNTTCTCTGAGNT  
ATAAATGCCTGAAAANCNTCNCAACCCCTTTTCTTTTGAAAAAAAATGGCGGNGTATTTTGGCNCN  
CTTTGAGCAACTTGAAAATTTTTTTTTTTTNAACCAAGCCNCTTAAATNGGNAANNNTTNTTGGGGG  
NAANCCTNAAAACCTCTTTTTTAAAAGGCCCCCTTGNTTTTTAAGGGNTNGGGGGCTGGGGAANAAAN  
20 TGGGCCNAAAACCTGGGGGGTTGA

20

TNNAACAAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GTTTCAGTCCTTTGGATCTACGTTTCCAATTAAGTATTAGTCAAGTATTAACAGCACAAAGTAATGGGTT  
25 AACTTTAGACTAGGAATTGGTGTGGGGTGGGGGGTGCAAGAATCTTTATTTTATTTTATTTTGGGA  
TAAAAGTTTTATCTATTATATATTAACGTTCTTGCTGTGCTGCTGCAAAGCCATAGCAGATTGAGGC  
GCTTTGAGGGCCGAATTATTCTCAAGTTGAGAGATGTCCTCGGGTTGAATTGAAAGCCCTACCCAA  
AACTGCAGTGGGAAGGGGAGAGCCTTTGCCTCCACTGCCCCACCCTCACCTCCTCGTAGACCCTCT  
GCCTTTTGAAAGCAGATCATTTTACTGAGATGTTGGACATTGCAGATGTCTGTTCCCCAGGCCAGCAG  
30 GGACCTCTGAAACCTTCATGGCCTGGCCTTTTTTTTTTTTCAANCCNNGGGGTTTTTCAAAGGGANACCCN  
GGATTTTGAAATCGAAAANTTTTCCAAGCTNTATTTCTNAAATTTNANAACCTTTATNCNAAGGTNA  
AATTGGAAGGGCTTGTGTGNAAACCTTNACCCCCCTTGAAANCCCCCCTTAATGAAAAAACCTTGGG  
GGGTGGCNTNAAAAAAGGANGGTGGGNATTNAAAGTTTAAAAANNNCCCGGTTTTTTGAAGGCCN  
AAATTNCCCCCTGGGGAATTAAANNATTTCCNNGGTTTTCTTGGCCCCNTTTAACCTTTGGTGNCC  
35 TGGGGAAGGGAATTGGGGGNAAAAAAATGGTTGGTTTTTTNCCCCAAACCTAACCCCAATTTCTNT  
TGGAATTAAAAATGAAATTTNAAAGNTTTTNNTTTTTGCAAAAAAAGGGCCTTTTTGGCCGNT

35

TTGANACAANCTGGAGCTCCACCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
40 GCTCNGNNAACNANGTTTTTTTNNNTTNCNGCTGGGNTGNACCTGTNCNCGGNGNNCNATGGNNCCCA  
CCTGGNCCCTAACCTGCTCCTCCTTGGCTATGANCCCAACAGGGACATCCCTGGCTCCTGNTGGCCGTA  
GNGNGCTGGCATGGCCACCTNNGGGCTNACCTGCTGCNNGCNGACTTGCTTCCCGGCTGANCCGT  
NACCTTGNTCNCTACTGGTAACCNNTCCTTNACNNGNNGCCTTNCANGGGNNTACCCANGGGANT  
GATTCTTCTGCNCTGNTCCTACCTTNGCTTATTTCTTGGNCGCTTNGGTTTCTNNCTTGGGTACANACC  
45 CTGGTNTTCTGNTGGNNTNANGAATGCTCNCTCNTGNGCCNGNAANTGAATCTTCTTGGGGNNAAN  
TGANNANTCTNTTTNNANGGGGTNNNTNGAANNCCNGTNNNTACCTNNGCNNNGGNAACANANANC  
NTGGATNTCTNGNCNCGCNTGNCTTTGGGNTCANAAATNCCATGCNNTNGGGNNANAACCTANNNCN  
TAGNGTTTNNGNANCCCCNCCNNGGGGGGNTNCNCTGNNTGANANTTTTNNNTATTNAANATCCTTT  
NCGGGCTCTNAAAGGNTTANNNNGGNGCCCNCAACNTTTCACNATNTCGNNGNNCCCCNCAANNA  
50 AANAAAANCNNCCTNNTTCTTTNCCNGTCGCTCNCAANNACANCCCNNNNNNGNCNTCANNAANGN  
NGGNGCTTCNNTNTCTNCCTANANTNNNNNNNNNTCNCCNANNNTCAATGNCNGGNAGTATANANN  
NNTNATTTNTNGNCANCTCCGTNTNCCGTGTGNNCATCTCNTCTNNGNCNNNATATNCNNGCNG  
NTNCTTNCNACNTNNACTTNTNCCNATCNTTNGTNCNTANNTNTNANCNCANGCTGCNNCCTC  
TCCAACNTNCAATTCTCGNCNCGCNTTCCNNTTTNNTCANTANCANNCNCATCNTACTNTCGNTN  
55 ANATGCTNTGTNTNCTCTGCTTNNCNCNTTCTNCTCNNTNCCA

55



TACTAANGGGAGGGACNCANNNAACNCNNNANNTTGGNGCTNGAGGCCCTCATAGTGAGTCCGCATT  
ACAGTGGTNNCCGCCCCCTACTNTNNAGNGTGATCNAACCANANTACCATTACNCATTATTTCCCNNT  
AATNTTTATTTATCTNCACNANNACAANCTCTGATANCNTNTTCGNTCNNNGGGNTTATCNTNTGCNN  
5 CTNGGTNNNAANNCATNNACCCTANATCTGNCNCNANCCCTTATTCTTCAANNTANGANTNCGNNCNC  
ATCNTNATTATNNATAGANNNTNTANTCTNNNNACNGNAATCAAAGCNNCNCNTNTNTTTCTNTNT  
NTTATNTCNCCTCTTGNGGANNCCCCAGGANNCGNTNCANTTNTAATTATATGTCTNTNTCTNTCTNT  
NTTNTNTANTTNTNTTTTNTTCTTACGCGTNAACNANTGTNCNATATANNNTTTGTANCGATNAGGCAC  
NNNNNNATTAANTTTNGTGTCTATACTNTNNNCCGNNACNNCGNAANNCCATTTTCTATCNTNGNTNT  
10 ANNCAACNTCNNCAATNTNNTNNNTTNNNNANNTNNNCNNCGANACANNNGNNCACNTTNANNCTA  
TTNGNCCNCTNNCCCCAGACNNACNNGGCTNNTCCTCNNNTAATANNNTNANCTNCATGGNNNCTATT  
TNGANTATNCNAAATANTNTTNTTATATNATNCAAANNNATCANGTTTNNCTATAAGTTATNNANNTC  
AAGNGGANNNANTAANACGCTCCANGCTANGTTNTCTCNGGANNCTNTGAGATATAAAANNNTNTN  
NAGNNCNNNGATANNNGCAATNTTNATNGTTTGNCTTNTATCCTATNGNNTATNTNTANNNNNTNN  
15 CTNGNNTNNNTNCGTCNTCAATNTTNANTNTNATTTNTNNTNACATAATTTTCACCTACTCTNNCATNN  
NATNNNNCNNNNATNAANCCNCNCGTTCTCCTCTCTCACCTNTCNCCTCATCACTTTACTAATNTNTA  
ATNATCNACGCGTNCGCTTNNANANGTCNNNANNCNNTGTNTCNGTCCTCNNNCGATNTACTCAGCC  
NANNATNTTCTTAATTACNTGTGCTCTGCNNATGTTATCATTTACANGANNNGANTCCTATNTTCTNN  
ATTNNNTCTNGNANTNNNTCANNGGATANTTATACCTATATTACTCNCCTCTNCAATNTTACAGNTNTA  
20 ATANNNGCNGGACANTNTATGATGNANCGNTATATGTANANTACTCATATCNNCGTGNGCGTTACNA  
NNTNCNATATCTCCTCANAANGTNNCTNCCTTTNTCAGTGACACAANATNNGATNNTGNCCGCTANAG  
NNGNNTGGTNANNNNGNATNTNAGTATCATTATNTATTANTNGTNCGCTCACATANACGNNNGNCCNG  
NCGNCTNNNCTNTATTNNCATATATNAACGNNTCNCTAAACANNTAATNNNTAGAGTCC

25 TNAGCCTATNNGGAGNTNNATNNCAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGNAGG  
ANTTCGGCACGAGGCCCTGACGTGCACATGCGGGACCTGGTGGGCATGGAAACACNATTTCTTGCCANG  
TGAACCCANCNANTNGAACGGGGNCCANNNTTANCANNTNNTTCTNNTNTTTTGCNNGNTNGCNAGAA  
30 ATNGCAAANGAATTNCCCTNCCCANGAAAANGACNGGCNANCNCTNNTNNTGNTNAAAGGNNGANCACC  
TGANGAATGNCATNAACNTTAANCTGGGGCCANCCCTTAAGAANTACNCACGTATNAGCATGCNNAA  
NGACNTTAAGGCTNGNCGGCGCCGGGCTTCTCCTCCCGAACGAGCANAAACCGGTNGACACTCTTGNG  
GGGCCCAAAGNACAGGGCGGTCAAGGGAAGGGCCCCCGCTGCCGGGGCGTACCTGTGGGAGGAGGTC  
TCNNGACCTCCTTGTGGGGCTCTCAANNNGCCTTTCTTTNTGTGGGAGNGGCACAAAGGTANGTGGCA  
35 CACAANATGGGGCTNTATGCTTNTANAATATTGGTGACACTGTNTTTTCCANANTNCCACGACTCTAG  
CCCCGCTTCTTTTCTNCTNTTTTTTGTGCCCCATTNTTCAAGGGGTANTATGGNCANGGCTTCCANCCT  
GNGGTGGGGNNTTTTTTCCAGGNANCCNCCGGGCNCTTCAAGAAAAAGGNCTTCNTAAANCCC  
TCCNCTGGCNTTTCTTTCTTTTTTTTTTTTTTGGGGGGCCCAACCATNTTTNTTNCNGTGGCAGCCT  
TTTTTCCACTTTAAAAACTTNTTTACTTNAANNCCGCCCANAAAGGNGNGNTTCCNCTCNTACCCCN  
40 TCCAAGGNGGGANGGAAAAAATTTGNTNCCGNTTTGTTTCANCCCCCTCCTTTGGTTNAA  
CCCCNTTAAATCNCTTTGNNGGGNGAAANNGNNTTGC

45 TNAGCCTATNNGGAGNTNNATNNCAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGNAGG  
ANTTCGGCACGAGGCCCTGACGTGCACATGCGGGACCTGGTGGGCATGGAAACACNATTTCTTGCCANG  
TGAACCCANCNANTNGAACGGGGNCCANNNTTANCANNTNNTTCTNNTNTTTTGCNNGNTNGCNAGAA  
ATNGCAAANGAATTNCCCTNCCCANGAAAANGACNGGCNANCNCTNNTNNTGNTNAAAGGNNGANCACC  
TGANGAATGNCATNAACNTTAANCTGGGGCCANCCCTTAAGAANTACNCACGTATNAGCATGCNNAA  
NGACNTTAAGGCTNGNCGGCGCCGGGCTTCTCCTCCCGAACGAGCANAAACCGGTNGACACTCTTGNG  
50 GGGCCCAAAGNACAGGGCGGTCAAGGGAAGGGCCCCCGCTGCCGGGGCGTACCTGTGGGAGGAGGTC  
TCNNGACCTCCTTGTGGGGCTCTCAANNNGCCTTTCTTTNTGTGGGAGNGGCACAAAGGTANGTGGCA  
CACAANATGGGGCTNTATGCTTNTANAATATTGGTGACACTGTNTTTTCCANANTNCCACGACTCTAG  
CCCCGCTTCTTTTCTNCTNTTTTTTGTGCCCCATTNTTCAAGGGGTANTATGGNCANGGCTTCCANCCT  
GNGGTGGGGNNTTTTTTCCAGGNANCCNCCGGGCNCTTCAAGAAAAAGGNCTTCNTAAANCCC  
55 TCCNCTGGCNTTTCTTTCTTTTTTTTTTTTTTGGGGGGCCCAACCATNTTTNTTNCNGTGGCAGCCT  
TTTTTCCACTTTAAAAACTTNTTTACTTNAANNCCGCCCANAAAGGNGNGNTTCCNCTCNTACCCCN

TCCAAGGNGGGANGGAAAAAATTTGNTNCCGGNTTGTTCANCCCCCTCCTTTGGTTNAAA  
CCCCNTTAAATCNCCTTGNNGGGNGAAANNGNNTTGC

5 TNNANAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAG  
GAANCCGNTGNCNANNCTCAACCANCCATAAAGATATTGGNACCCTTTATCTACTATTGGGNGCTTGG  
GCCGNNNTAGTAGGAACAGCTCTAAGCCTTCTAATTTCGCGCTGAATNAGGCCAACCCGGAACCTCTGCT  
10 CGGAGACGACCAAATCTACAACGTAGTTGTANCCGCACACGCATTTGNAATAATCTTCTTCATAGTAA  
TACCAATCATAATTGGNGGATTTCGGTANCTGACTTGTNCCCCTAATAATGGGTGCTCCCGATATAGCAT  
TTCCCCGAATAAATAATATAAGCTTCTGACTCCTCCCTTCCTTATTCTACTACTCCTCGCATCCTNTAT  
AGTTGAAGCTGGGGCANGAACAGGCTGAACCGNGTNCCTCCCTTACAGGCAACCTANCCCATGGCA  
GGACCTTAAGTANATCTAACCATTTTNTNTTTACACTTAGCAGGAGTTTCCTCAATTTTAGGAGCCATC  
15 AACTTCATTACAACAATTATCAACATAAAGCCCCCGCAANGTCACAATACCAAACCCCTNTGTTGGA  
ATGANCCGNAATAATNACCGGCCGNACTACTACTAACTTTTNGTTCCCTGGATTANCAGCCGGCATCA  
CAATGCTNTTAACAGAACCGGAACCTAAATACAACCTTTTTTCGACCCGGNNGGAGGAGGAAACCCTA  
TTNTATTTCAACCCCTTTATTCTGATTNTTTGGGACCCCCCGAAGGCTATATTTTAAANCTTANCNGGGG  
TTGGGAAAAAATCCNTTCATATTNGGGACCCCTACTTCCTTCNGGGAAAAAANAACCNNTTCNGGA  
AATTTTGGGGAANAGGNTTGGGGCCTTTAAANGGCAAANNGGAATTTNTAGGGGTTCATCGGAANG  
20 AAC

TTGAAACCACTGGACTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCNCCTGGGCTGCAGGNTT  
NAGTCCTTNGGATNTANNNTCNAANNAAGTATTAGTCAAGTATTNGGNNGCACAAGTAATGGGNTAA  
25 CTTTACACTANGAATTGGCGNTNGGGTGGAGGGTGCATGAATCNTTATTCTATTNTATTTTTTNGGATA  
NAAGNTNTATCTATTATANATTAANCGCNCCTTGCTGACNNNTGCANAACCATANATAAATTNNANGN  
TAACCTTTNAGGGCTGGANTGCTTCTCNNNTNCGNANATGNCCNNAAGNATTCGAATNGANACCCC  
NAANCAGAAAANNTTGNANNGGNCAGGNNGAAATGNTTNTACCTTCGTTGGGNNGANCCTCACCGAA  
ATNTTTNACCCTGCAGANNNTTGGGCNATACNGCTNNNTCTANNCNTGTNGNNAACANNCTTTNCCNAA  
30 TGCNNTATCTCATCTCTNTNNGTTTCCNNNTTNTNCCTNNNNNTGNCCNTTGCNTTTTTTTTTTTCNT  
TTCNNNTNGTNGCNTTTTTNACTNTNTCATTCTANNTTTATNGANTTNNNNAATNTCCNANTNNNNACN  
ANNNCTCNTNNACNTCTATTAANTACTATNGANCNNNCTNATCNNANNATGTNNTNNNTTTNATNTC  
CNGNCNNCTCTTCTTTCNCNCNTNTATNNNGCCNANNCNACNNTTNGNNAATNNCTTCTTCTTANGNN  
NCANNNNANTNCNATTCTNTGNATACATTTNTGANNANCTTTATNTTNNGNATACTCTNACNNCAANN  
35 NNANCAGANNTCCNTAACTATAANTACACTTTTTTATATTNTTNACCCGNGGNNAATANAGAATAC  
ANACNCTNGACATNCTNCTTGACGTNANGACCGTNNNNACTTNTTCNACNAGANCCNTTAGANGTNTT  
NACNNNTTNCATAATNTNAANCCCCNTCATGNNTCTCACGANTGCTCTATTATTNNTNANACNGATTT  
CNTACNCTAGCNATANCAGCTGANGTTANTCCCTNCCG

40 AAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGCCGCC  
ATGGGCCGCGTGATTCTGTGGGCAGAGGAAGGGCGCCGGCTCCGTGTTCCGCGCACATGTGAAGCACA  
GAAAAGGCGCCGCGCGCCTACGCGCCGTGGATTTCGCCGAGCGACACGGATATATCAAGGGCATCGT  
GAAGGACATCATCCACGACCCGGGCGCGGAGCGCCCTTGCCAAAGTGGTTTCCGGGATCCGTACC  
45 GTTTTAAGAAGCGGACAGAGCTGTTTCATCGCTGCTGAGGGCATCCACACCGGCCAGTTTGTGTACTGC  
GGCAAGAAGGCCAGCTCAACATCGGCAACGTGCTCCCGTGGGCACCATGCCTGAGGGCACCATCG  
TGTGTTGTCTGGANGAGAAGCCTGGTGACCGAGGCAAGCTGGCAAGAGCCTCTGGAACTATGCCAC  
AGTCATCTNCCACAACCCTGAGACAAAANAAGACGCGAGTGAAGCTTGCTTCGGCTTCCAAAAAGGT  
CATNTTCTTCTGCCAACAGANCTGTGTGCGGTGGTGGCTTGGAGGTGGNCCGCATTTGACAAGCCC  
50 ATTCTGAAGGCGCGCGTGCCTTACCACAAGTATTAAGGCAAAAGAGGAACTGGTTGGCCACGGGTG  
GCGGGGTGTGGGCATGAAACCCTTGTGCGAGCATTCNNTTTGGANGGNGGCAACCANCCAACACATTGG  
GCAAANCTTTTTATTNTTTGCAAAAAACCCCCCTTGTGTTGGGCCGGGAAAGNGGGTTTTNANTTGGTTG  
NCCCGCGGAAAGAGNCCGTTTTTCNGGGGAAACCAAAAAATGGGCCGGGAAAANGGANAACTTA  
GGGNTTGGGGGTTTAAANAAAAGNTTGGTTTTTTTTTNCCTTGGAAAAAATAAAAAA  
55 AAAACTTGGGGGGGGGGGGGCCCGGGGCCCCANNTTTNT



TTGANAACGCTGGACTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
 TCGGCACGAGGGGACTNGTCTCTNANGCTGTCAAAGTGGCAGAACTCGAGAAGCGCCTGACAGAGC  
 TGAAGCCACTGTACGCTGTGATCANGATGCTCAGAATCCCCCTTCANNAGNTCTNCANGGAGCCTGN  
 5 CTCATGTGTACTGCNTNNANACNTNGGGGNGANTCNCACCTNGCCNTGTGGTTGNTNCTTTTCGTCCNAN  
 TACCCACNATNNTTNCNNNTGGATNNGCNGTNTTTTCAAGANTNNATGCTNTTNCNNATTTNNCAT  
 NNNNGTANAATTTNNNNGGGGGGCCCCNGAACCCNATNNTCCAATTATTTGNNNGGNCNTNCNTN  
 CCATTNGNCCTTNTTTTNTCTTTGTTCTTNATGTNAATATTNACTTGCCTCCATCANTCNGTCTTGNAN  
 10 GATCAAAGTNATNCNTTTTTTGTNTCANNTTTTNGACTCCTNTTGGTATTANCANCGTCAACTNNTTGA  
 TTNTTTTGTNTCCTCNTTNTCTATTNNNCNTCNCNTTTTNNANTTCNGGGTNTANAANGGATNNATTGT  
 NNTNAAACANCNTGCTTATCTTCTTNAAGGTNGACTTTTNNCCANCATTTGNTTNCNTATNCNTNNTTT  
 ACTCNTTTTGTNACNTNNNCTCTCTTNTCNACTCNATNTNANTCTNNNGNNTATCTTATCNCNTNTT  
 TCTNANANTCCNNNGCTNGTATNTTTNCTTTTNTCACTANTTGTNTNTCNTNCNTNNANNNAACTTC  
 15 NCTTCNCTANTTTTANTTNTACAATTTGNAGNNTATGTNCTTNTTTATNACTNTTTAGAGNCTAGTAT  
 ATTTTATGCNNTTTCTTNTANTNNTTANNNACTNGNTGANTTTNGNTATATTTTAATNGNTTTNNCN  
 CGNTCNCCTANATTTCTCTTNTTGTNTTAGCGGTNGAGNACTCCNTTANTGGTCTNCGTACGTCTCT  
 CTCTANCTNCTCNTTTCNNCTCG  
  
 20 AAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTCG  
 GCACGAGGGGGGCGGTGGCGGCCGCTGGCTGGCGGTTTCGGCAGTGAGTGCAAGGATCACCATGATTCT  
 TCAGAGACTCTTCAGGTTGTCTCTGCTGTTTCACTCTGCAATCTCAGTCTCTTGGAGGAGGAACATTGG  
 TATTACAGCAGTGGCATTAAATAAGGAGCTTGATCCTGTGCAGAACTCTTCGTGGACAAGATTAGAG  
 AATATAGAACTAAGCGACAGACATCTGGAGGACCTGTTGATGCTGGCCCAGAATATCAGCAAGACCT  
 25 AGACCGGGAGCTTTTTAACTTAAGCAAATGTATGGTAAAGCAGACATGAATACGTTCCCTAACTCA  
 CGTTTGAAGACCCCAAGTTCGAAGTTGTGAGAAACCACAATCCTGAAGAAGTAATGTAAAATTGATC  
 TGGTAATTTGTCTAGATTAGTTGTACAGCTGGCCACAAGTAACAGAATAAACATTTTCATAGCTGTCA  
 AATGTTCTTTTAAATTCTGATTTCAAATAAAATTTTGGTGATGTTAGGTAAAAAATAAATAAATAA  
 TCGGGGGGGGGCCCCGCTNCCCAATTNCCCCCTTNGGGGGGNNNGNNNNNGANNNNCNCNTNANGNNNT  
 30 CNNCNCNANCCCNANCCCTNGNCCNNTTNNCNGGCNTTNTNCCNNNNNNNGNNNAAAACNNTNNGC  
 NTNGNNNCTNTNCCNTCNCNATNNTGAANNCCNNNNNANNNCNCNTTNTNNTTNNNNNNCNCNGTNTNN  
 NNANNNNCCNCCNNNNCCNNTNTGGNNNNNNCNCNTNGGNNNNNNCNCNNCNCNCNCT  
 TNNNNNTNNCCNNNNNNNGNNNNNANNNNNNNNGGTGGGNTNNNANNNNAANTNNNNNNNNCN  
 NNTNCTNNNGNNNNNNCNCNNNNNNNNNNNTNNNNNC  
 35  
 GCCTATNNNGAGNNGNATNACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
 TCGGCACGAGGCTTGAGTTGTCTCCTTGACCTGGCTAAGCCCTGGGAGTGTTAGTGTAGATCCCATG  
 GGATCTATGTTGTCTCTTTTATGCCACCGTGGGGCATTGTTGTAATTGCTACTCTACCTGAATGGAAA  
 40 ACAGGGCCTTGGTCAGAAAAAGAAATGCTCTGGACACTGCTAAGGACTTAGAGTCAGCCCATGGTGATT  
 GTTTGGCTTCTTGTGTCTGCCTCTTCTTCCCTAGTGTCTGCCTGGCTCTTTANCAACCTCCCAAGGG  
 TGGACAGGGGGAAAGTTGGTGGTGTCAAAGGTCAAACTATGGTGTAGAACAGTGTCTGAGACCCCTC  
 TGTGATCTTTCTAAATGAACAGAAATTGATCCATACCAACGAGGGGGCAACTTGTCAATTTCTTTAATG  
 TCTCAATATTAAGTGAATGCTGCCTTNGGGTTCTCACCTGCNTGAATGTTTTGAATTGGATGTNATA  
 45 CTGGCTATAAGTCTCCAAAGGAATAACTGACTCAACTATTTACCCTGTTTACTCCAGTAAACAAGTTTT  
 CCTCATCCCCCTCAGNGTAAAAATCCTTCAAAAGGTAGGCGAATTGCTTCTGGGGTGTTAAAAGCGTA  
 NGTGGGGATATTTTGAAGGGAGGAAAAGTCNNGTTCNGGCANAAAGGNGTTTTCCCCCNNTAAAANC  
 TTAAGGTATTTNNCTTGNNTNNGGGTTTTAAACCCNCTAAACTTTTGNANGGAAAAGGNTTCCNCC  
 50 CCCTTACNAANGAAAAACNTGCTTNNAAAAANCCAAAANNGGNTTNGNAANGAAAAAANGG  
 GGNAAAANGAAACNTTNTCCCTGGAANNTTNTTCTTNGGNCNNGGGNAAAANACANCAAAAAGG  
 TGAATAATTTTTCTTNTTTTANAAAAGGNCANCTACACCCCTTGTGGNAAAANNNNNNNNCACCCC  
 TATCT  
  
 55 GCCCTATAGNAGTCGTATTNCAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
 TCGGCACGAGGAAGGTGCCCATNANGCGCTCNGAAATGCTAAGGGATATCATCCGTGAATACACTGA



TGTGTATCCAGAAATCATTGAACGTGCATGCTTTGTCCTGGAGAANAAATTTGGAATTCAACTGAAAG  
 AAATTGACAAGGAAGAACACCTGTATATTCTCATCAGCACCCCTGAGTCCCTGGCTGGCATACTGGGA  
 ACGACCAAAGACACACCAAACCTGGGTCTCCTTTTANTGATTCTGGGNGNCATCTTCATGAATGGCAA  
 CCGTGCCANNGAAGCTGTCCTCTGGGAGGCACTACGCAAGATGGGACTGCGTCCTGGGGNAAGACAT  
 5 CCCCTNCTTGGAGANCTGAGGAAGCTTCTNACTTACNAATTTGTAACAAACAAAGTACCTAGACTACAG  
 ACGAGTACCCAACAGCAACCCTCCTGAGTATGAGTTTCTCTGGGGCCTCCGATCCTACCATGAGACT  
 ATCAAGANTGAANAGTGCTACGATTGCTGAGGTTTCTGAGAGAGAGACCCCTGTNACTTGGACTG  
 CACAGATTGAGGAGGCCCCANANNAAGCCCTNGGATGCTTNGTATGCTNCTNTCCCCCATNGC  
 TTGANAGCACGGGCTGTAGGCGANNAACCCCCCNCTGGGGGAATTNGGNGAATGAANGNNGTANTC  
 10 TTNNNGCCCTTGTGNAGCCTTGAATGANCAATTNTATTTTAACTGCTGANNNGTGGGGATNAAT  
 GGAANTGGNGAATTTNTGNTNGAANCCCNCTGGTNCAGAAATNCCCACTTTAACCTTNTTGGGGCCCN  
 CNATACTNCCNAANAATAGNCTTTCTCNCCATNATTTTNTAAAANCNNTTTTCCGGGNCNCCANTN  
 ATTNCTCCCTTGNNGCTNACNAAAACCAANTTCCNNTNCT

15 NCCNCAGNCAANNNTTTTANTNTNNNNNTTTNNTTNNNNNTNNTNNNCCNNTCNNTTNTANTNTTT  
 TTTTACCTANTCTNTTGGNNNNNGNNNCGNTNTNACCTTTGANNNCACTGGNCTCCCCGCGGTGGCG  
 GCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTCGGCACGAGGTTGTNANTTACCAATTAC  
 CTGNGGTATTGGAGAAGACTCTTGAGAGCCCCTTGGACTGCAAGGAGATCCATCCAGTCCATCCTAAA  
 20 GGAGATCAGTCTGGGTGTTTATTGGAAGGACTGATGTTGAAGCTGAAACTCCAATACTTTGGCCACC  
 TGATGCAAAGAGCTGANTCATGTGAAAAGACCCTGATGCTGGCAAAGATTGAGGGCAGGAGGATCAA  
 GGGGACGACNTNANGATGGCNTCACCGACACAATGGACATGGGTTTGGGTGGACTCCACAGTTGGT  
 GATGGACATGGGAGGCCTGGCGTGCTGTGGTTTATGGGGTACNAAGAGTCGGACAAGACTNGAGCG  
 ACTTGAANTTTAACTGAACTGNNNTTACCTCTCCTNCTTCTGGANNATANCCNCCTTACNCTCTNCT  
 25 TTCTNAAACTGGANTNTTTGAACCTTTTNCCTNGCCCCNGGGCCATTGNCCTTTAAATANTGGGTCCAA  
 TCTTNANNTGCCATTATTAGNAAGNGTTTAAAAAGCANCTTTTCTTNATTNTTTAAAAANTAAAAA  
 AAAANNAATTTGGGACCATTCTNNCCCNNTTTCTNCTNNTNNTNNTTCTTNNCTTCCNATGNTAGNGG  
 NCNCTTTNACTCCNCTATNTTCTCCNCTTTTNNNNNTNNTNNTNNTNNTNNTNNTNNTNNTNNTNNT  
 CGTGTNCCNTCGCNNTTGTATTTCTNCCGGGGTGNCCNNTTANGNNTCTCCNCTTNCNCTCATGNT  
 30 ANNTNTNNTNAGATNTCCTATCTNCTATNCCCTCGTANGTCTCCTTCGATTTCAACATNGNTANA  
 CCCNCTNGNATGNTTCTNACCTNTCGANGTCTGCTCGGNNNGCTCTNCTNCTGATTTCTCTCANNNT  
 GTTNGGCACTCGCACNNANTTNCTACNCACTCTTGNAGGGTTNTNCTANTNAGCACGCTNNNTATA  
 CNNNTCACCTACNANNNTCCTNCCGNGANTNTGNANNCGNANNTTTNTGTTCTCACNNTNATAT  
 35 CTCTGTCGCCNNGGAGTGTNTAACGACTNTCTTGTNCTNCGTTTGNACGCACNCTCCGNNANGNTG  
 CCNACNCCG

40 NCCNCAGNCAANNNTTTTANTNTNNNNNTTTNNTTNNNNNTNNTNNNCCNNTCNNTTNTANTNTTT  
 TTTTACCTANTCTNTTGGNNNNNGNNNCGNTNTNACCTTTGANNNCACTGGNCTCCCCGCGGTGGCG  
 GCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTCGGCACGAGGTTGTNANTTACCAATTAC  
 CTGNGGTATTGGAGAAGACTCTTGAGAGCCCCTTGGACTGCAAGGAGATCCATCCAGTCCATCCTAAA  
 GGAGATCAGTCTGGGTGTTTATTGGAAGGACTGATGTTGAAGCTGAAACTCCAATACTTTGGCCACC  
 TGATGCAAAGAGCTGANTCATGTGAAAAGACCCTGATGCTGGCAAAGATTGAGGGCAGGAGGATCAA  
 45 GGGGACGACNTNANGATGGCNTCACCGACACAATGGACATGGGTTTGGGTGGACTCCACAGTTGGT  
 GATGGACATGGGAGGCCTGGCGTGCTGTGGTTTATGGGGTACNAAGAGTCGGACAAGACTNGAGCG  
 ACTTGAANTTTAACTGAACTGNNNTTACCTCTCCTNCTTCTGGANNATANCCNCCTTACNCTCTNCT  
 TTCTNAAACTGGANTNTTTGAACCTTTTNCCTNGCCCCNGGGCCATTGNCCTTTAAATANTGGGTCCAA  
 TCTTNANNTGCCATTATTAGNAAGNGTTTAAAAAGCANCTTTTCTTNATTNTTTAAAAANTAAAAA  
 AAAANNAATTTGGGACCATTCTNNCCCNNTTTCTNCTNNTNNTNNTTCTTNNCTTCCNATGNTAGNGG  
 50 NCNCTTTNACTCCNCTATNTTCTCCNCTTTTNNNNNTNNTNNTNNTNNTNNTNNTNNTNNTNNTNNT  
 CGTGTNCCNTCGCNNTTGTATTTCTNCCGGGGTGNCCNNTTANGNNTCTCCNCTTNCNCTCATGNT  
 ANNTNTNNTNAGATNTCCTATCTNCTATNCCCTCGTANGTCTCCTTCGATTTCAACATNGNTANA  
 CCCNCTNGNATGNTTCTNACCTNTCGANGTCTGCTCGGNNNGCTCTNCTNCTGATTTCTCTCANNNT  
 GTTNGGCACTCGCACNNANTTNCTACNCACTCTTGNAGGGTTNTNCTANTNAGCACGCTNNNTATA  
 55 CNNNTCACCTACNANNNTCCTNCCGNGANTNTGNANNCGNANNTTTNTGTTCTCACNNTNATAT

CTCTGTCGCCNNGGAGTGTNTTAACGACTNTCTCTGTNCTNCGTTTGNACGCACNCTCCGNNANGNTG  
CCNACNCNCCG

5 TNNNNAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GANTTCGGCACGAGGCTGNAGCCCTCCGNGATGTNTCTGAGGAGTTGANCCGNCANCTGGATGACATC  
CTCANNACATACTGCGTGGACAACAGNNANNGGGGCCAGGTNAGGATGTGGCANAGGGNGAGCCTG  
CTGAACCCGAAGATGCANAGAAGNCCNGGACCTATNCCTCANGGANTGGGNAGCCTGAGCCAGATAC  
10 TCCAGTAGTCNNTGNNGAGAAGGAANNCTCCAAGGGGAGCCGGGCGCGGTCTAGATCCTGTACCAG  
NGATGAAGTTTGAGACCGANACCACCCAAAGCCNCNGGATANTAAGAAANNCTANGGTGTGGGAANG  
GAAATTACCTTGCCCACTTTANNTNCCNCTTAAAGCCTANAGNGGTGGCAGGGAAGGNACTGNCNCN  
NCCCNNTGTGGTGTGGCCAGGTTCAGTNNNTAAAAACCCAAGCTTACTTGGTTGGTGGGCAANGNGG  
GCCCCACTTGCCGGGNNGGGGCTTTTGTCTCAANTTACCCTTNCGTGTGTAGCCTTCCANGNCAGG  
15 CTTGANGGNGGGGTCCANTTGTTCGTTGANCCAAATTTTTTAAATACTTAAAGNTGNTNTTGGTT  
TGNTTTTGGTTTCCNAAAGCAANCCCAGGTTTCTTGGGNGCTTGCCCCNCCCACCCAGGGTCTTGGG  
NCCAAAATNAAAAAGGGGGNCTTTTCTTGAATGAAAGGCCNTTTCTTTTCTCCCTTGGGGGCGNG  
GTTTTATTGNCCCATGAACCTTNNNTTTTTTGGACCCAAAAAAGCTTGGGGNGGGTTTNTTAAAAANGN  
NNNCNTTTTCCCTTTAAGGGGGACCCCCCGGGGGGGAGGGNNTTTTNTTAAAAAANAAGCTTGGGT  
TCAAGGGNNTTGGCCCCNNTTAAAAAAGCTT

20

TTGAACACAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGC  
TTTGTCTGGAGTATGAGGCCTCAGCCCCGAGGCCAGTGATGCCAGGGGCTCAGGTGTTCAGGGA  
25 CTGAGCCGCACTGGTCCCCAAACCTGCGTGTGCTTGTGACAAACAAAACCTGTCGGCTTCTAGCAT  
TTACTTTCTGCTTCAGAGGAAGGAAATGGGAATGCTAATTTTTTAAAGACAAGTGGATTTTGAGACTTT  
ATCTTAAATGGAAGCTGTTTCTGATTTTACGAGATCCACATATTTTCACTGGGGTCATGATTGACAA  
TTCTGTATGGGCACCATCCAGCTCAGGACATTTCTTCCGTAGGCCAACTGAATTCTTCCCTGCACA  
AAAAGGTTTACGCTGAGCAGATGCTGTGTACAGTTGCGGTTATACATTTCTGATAGCCTCTGAATTC  
30 ATCAGGTCCATGAAACAGGAAAAAGTAGACTATCAGTCAGAAAGCCTGGCCTGTTCCCTACCTTTTG  
CATTAATGGGTGGATGTAATTTGAAACAGTATGCCCTTGTGTCACTCAAGTCCAGCTAGTCCAATATCC  
CANGTTCAATATTTGAACATCAGCTGATGGAAAAAATGGGCTTTGGAAATGCTTTATGAATCTNTTA  
AATACCCTTNCATTTTCACTCAAATTTCTGAACAGGAGTTGGNAAAAANGCTAANNCCCCNTCCT  
AAACCCCTTTTTTTTCTTAACNGGGAANAATAGCAANCCCCAAGTCNTTCCCTGGGACCTTGTN  
35 NCCTGGTTGGGAAAGGGCNTTNGGTTTNCCTGGGCCCATTTGGGGTNGGGCCAAAGGCCGGGGNAA  
ACCTTGTTTTTAAAAATAAACCCGCTGGGNTTGGGGGGGNAAAAAAAT

35

TNNNNAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
GGCTTTGTCTGGAGNATGAGGACCTCANCCCCGAGGCCAGTGATGCCAGGGGCTCANGTGTTC  
40 GGGACTGAGCCGCACTGGTCCCCAAACCTGCGTGNCTTGTGACAAACAAAACCTGTGGCTTCTTA  
GCATTTACTTTCTGCTTCAGAGGAAGGAAATGGGAATGCTAATTTTTTAAAGACAAGTGGATTTTGAG  
ACTTTATCTTAAATGGAAGCTGTTTCTGATTTTACGAGATCCACATATTTTCACTGGGGTCATGATT  
GACAATTCGTATGGGCACCATCCAGCTCAGGACATTTCTTCCGTAGGCCAACTGAATTCTTCCCT  
GCACAAAAGGTTTACGCTGANCAGATGCTGTGTACAGTTGCGGTTATACATTTCTGATAGCCTCTG  
45 AATTCATCAGGTCCATGAAACAGGAAAAAGTAGACTATCAGTCAGAAAGCCTGGCCTGTTCCTTACC  
TTTTGCATTAATGGGTGGATGTAATTTGAAACAGTATGCCCTTGTGTCACTCAAGTCCAGCTAGTCCAA  
TATCCCAGGTTCAATATTTGAACATCAGCTGATGGAAAAAATGGGCTTTGGAAATGCTTTATGAATCTC  
TTAAATACCTTCCATTTTCACTTCAAATTTCTGAAACAGGAGTTGGGAAATAAGCTAAATTTCCCN  
CTTCTTAATCCCCTTTTTTTTTCTTACTNGGGAANAATAGTCAAACCCCAAGTCNTTACCCT  
50 GGGACCTTGTANCCTGGTTNGGGAANGGGCTTTTGGGTTTTCCCGGGGCCCAATTTGGGTNGGG  
CCCCAAANGGCGGGGNAACCTTNTTAAAAAATAAAACCCNGGGGGGTTNGGGGGGAAAAA  
AAAAAAAAAAAAAN

50

AAAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTCG  
GCACGAGGGGACAAGTTCTCTCAAGCTGCCAAAGTGGCAGAACTCGAGAAGCGCTGACAGAGCTGG

55

AAGCCACTGTACGCTGTGATCAGGATGCTCAGAATCCCCTTTCAGCAGGTCTGCAGGGAGCCTGCCTC  
 ATGGATACTGTAGAGCTGTTGCAGGCGAAGGTGGGCGCCCTGGACCTTGACGTTTTGGACCAAGTGGA  
 GGCTCGGTTACAGAGTGTGCTGGGAAAAGTGAATGAGATTGCCAAGCATAAAGCTTCTGTAGAGGAT  
 GCAGATACACAGAGCAAGGTGCACCAGCTGTATGAAACCATAACAGCGCTGGAGCCCCATCGCCGCT  
 5 CCCTTCCTGAGCTGGTACAGAGACTTGTACCATCAAGCAGCTGCATGAACAAGCCATGCAGTTTGGT  
 CAGCTTCTGACACACTTGGATACACGCAGCAAATGATTGCTTGTTCCTCAAGGACAATGCCACCCTC  
 TTGACTCANGTGCAGACGACGATGTGTGAAAACCTGTCCACAATTGAGGGGAACCTTTGCCAACATTGA  
 TAAAAGGATGAAGAACTGGGAAAAGTGAGCACCTTTGGGTGATGGANGACAGGGGTAATTCCTTACC  
 CCTTTGACTNCATTAATACCTTACACAGAGNTTNCCTNTTAATTGNAACCTTNTTGCATTCCANTTTGAC  
 10 CTTGGGGGCAAGGGCTTTNTTGCATTGGGGGGCTTACNCCCCCTTCNTTTNAAAANTAATGGGAAGCT  
 TGGGGAAANTTAAAANGAAGGGNCTNCCCCTTTAGGCCNCANGATTTAAGGACCTGGGCCCCAAC  
 CCAATGGCCCAGNTTCTTGGCCCAATAANTGGT  
  
 15 AAANCTGGACTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCCGCGCC  
 GCCGTCGTCTCCAACGCCAGCGCCGCTCTAGCTCGCCGAGCTCCAGCCGAAGGAGAAGGGGGGTAA  
 GTAAGGAGGTCTCTATACCATGGCTCGTACAAAGCAGACTGCCCCGAAATCGACCGGTGGTAAAGCAC  
 CGAGGAAGCAACTCGCTACAAAAGCCGCTCGCAAGAGTGCGCCCTCTACTGGAGGGGTGAAGAAACC  
 TCATCGTTACAGGCCTGGTACTGTGGCACTCCGTGAAATTAGACGTTATCAGAAAGTCCACTGAACTCT  
 20 GATTTCGAAACTTCCCTTCCAGCGTCTGGTGGCGGAAATTGCTCAGGACTTCAAAACAGATCTGCGCTT  
 CCAGAGTGCAGCTATTGGTGTCTTGCAGGAGGCAAGTGAGGCCTATCTGGTTGGCCTTTTTGAAGACA  
 CCAACCTGTGTGCTATCCATGCCAAACGTGTAACAATTATGCCAAAAGACATCCAGCTAGCACGCCGC  
 ATACGTGGAGAACGTGCTTAAGAATCCACTATGATGGGAAACATTTTATTCTTTAAAAAAAAAAAAAA  
 25 AAAACTCGNGGGGGGGCCCCGCTNCCCAATTCGCCCTATAGGGAGNNNNNNNAAANNNNNNNNNNNN  
 NNN  
 NNN  
 NNN  
 NNN  
 NNN  
 30 NNN  
  
 GCCCTACTGGAGCTNCAACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAAT  
 TCGGCACGAGGAGGANNNTGNCNTCCTATNCNTATANNCCNNCTCANTAACCTTNTGNNCNATTTAAN  
 GAAAGTNTTGTGGTNTCTTCCCCATAAAGGAATTTACACAACCNCNCCNGGCCTGTGCCNGTGGATCA  
 35 TAAAAAAAGTGCCNTTNNCCNNTNGAANGTANTTAAAAAAACCAAAGGGGGGGGAAAAAACNNNCN  
 AAGGCCNAAAGCCTTNNATTGGGGGCCACCCGCCNGGGTGGCNAAAATCCCCTNTGGCCGGGGCNTT  
 TNTGGGCCNCTTACGGNGCNTAAAAAGNCCCGAATNTGGNNCCCTGGTNAAGGTTTGNATTANGNT  
 NTTGGAACCTTNCCTGNAANANACNCGTTATCCNGGCCCCCGCNTGNNATTGGANTCNGTGCCTC  
 CCATCCTGGGAAGGGGGGTGTTTCATTTACCATTCCNTCCNGGCCTTATTTGAGGGAAANGCCCCNNG  
 40 GNAAAATGNTTTNCNATNTTAAACACATTTTTTATAAGGGCCCCCGCATTCNNGAGGGGTTTTTAA  
 GGGGANTANCTTGNTTTTGCCCTGNGNTGGGNNTTGGNCNTTACTAAAAAGCTTCCAAGGGCCCCCT  
 TTTTGGACCCCCCTTTTTCTTTTGGGCNANAANGNNCAAAANAGCCTTTTAAAAAACNNGGGGGA  
 AGGGGGGGAACCCNTNGNNTTTTGGGGGGGTNTTAAATTGNCCCCNCCCCNCCCAAGGNGGTGGTN  
 GGGGNTTTGCCNNNACCGNCCCCCNNTTTAAAAANNANNAAGGGGGGGCCTTTTGGGGGN  
 45 CCNAAAANTNNNNANCNTTTTTTTTTNCCCCCTTTTTTNGNNTNANNTTNGGGGGGGGGNCCCCC  
 CCGGGGGGGGNCNNNAAAAANNNNNNNNNNNNNNNAAAAANNNGNNNCNCCNNNAAAAAAAANNN  
 NNNNNNNNNNNCT  
  
 50 GCCCTATANNAGNNGTATTACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
 TCGGCACGAGGATTGCAGCAAATCATGAAAGGTAACCTCAGTGCATTNATGCAAAAGGAGATATTTGA  
 ACAGCCAGAATCCGTTTTCAATACCATGAGAGGTCGAGTGAATTTTGAGACCAACACAGTGTCTCTGG  
 GTGGCTTGAAAGACCACTTGAAGGAGATCAGACGATGCCGACGGCTCATTGTGATTGGCTGTGGGACC  
 AGCTACCACGCCGCTGNGGCCACGCGGCAAGTTTTGGANGAACTGACCGAGCTCCCCGTGATGGTTGA  
 55 ACTTGCTAGTGATTTTCTGGACAGGAACACACCTGTGTTCAAGGATGACGTTTGCTTTTTTATAAGCCA  
 GTCAGGGGAGACTGCAGACACCCTCCTGGCACTGCGCTACTGCAAGGACCGCCNAGCTCTGACCGTGG

1997-1998		1998-1999		1999-2000		2000-2001		2001-2002		2002-2003		2003-2004		2004-2005		2005-2006		2006-2007		2007-2008		2008-2009		2009-2010		2010-2011		2011-2012		2012-2013		2013-2014		2014-2015		2015-2016		2016-2017		2017-2018		2018-2019		2019-2020		2020-2021		2021-2022		2022-2023		2023-2024		2024-2025		2025-2026		2026-2027		2027-2028		2028-2029		2029-2030		2030-2031		2031-2032		2032-2033		2033-2034		2034-2035		2035-2036		2036-2037		2037-2038		2038-2039		2039-2040		2040-2041		2041-2042		2042-2043		2043-2044		2044-2045		2045-2046		2046-2047		2047-2048		2048-2049		2049-2050		2050-2051		2051-2052		2052-2053		2053-2054		2054-2055		2055-2056		2056-2057		2057-2058		2058-2059		2059-2060		2060-2061		2061-2062		2062-2063		2063-2064		2064-2065		2065-2066		2066-2067		2067-2068		2068-2069		2069-2070		2070-2071		2071-2072		2072-2073		2073-2074		2074-2075		2075-2076		2076-2077		2077-2078		2078-2079		2079-2080		2080-2081		2081-2082		2082-2083		2083-2084		2084-2085		2085-2086		2086-2087		2087-2088		2088-2089		2089-2090		2090-2091		2091-2092		2092-2093		2093-2094		2094-2095		2095-2096		2096-2097		2097-2098		2098-2099		2099-2100		2100-2101		2101-2102		2102-2103		2103-2104		2104-2105		2105-2106		2106-2107		2107-2108		2108-2109		2109-2110		2110-2111		2111-2112		2112-2113		2113-2114		2114-2115		2115-2116		2116-2117		2117-2118		2118-2119		2119-2120		2120-2121		2121-2122		2122-2123		2123-2124		2124-2125		2125-2126		2126-2127		2127-2128		2128-2129		2129-2130		2130-2131		2131-2132		2132-2133		2133-2134		2134-2135		2135-2136		2136-2137		2137-2138		2138-2139		2139-2140		2140-2141		2141-2142		2142-2143		2143-2144		2144-2145		2145-2146		2146-2147		2147-2148		2148-2149		2149-2150		2150-2151		2151-2152		2152-2153		2153-2154		2154-2155		2155-2156		2156-2157		2157-2158		2158-2159		2159-2160		2160-2161		2161-2162		2162-2163		2163-2164		2164-2165		2165-2166		2166-2167		2167-2168		2168-2169		2169-2170		2170-2171		2171-2172		2172-2173		2173-2174		2174-2175		2175-2176		2176-2177		2177-2178		2178-2179		2179-2180		2180-2181		2181-2182		2182-2183		2183-2184		2184-2185		2185-2186		2186-2187		2187-2188		2188-2189		2189-2190		2190-2191		2191-2192		2192-2193		2193-2194		2194-2195		2195-2196		2196-2197		2197-2198		2198-2199		2199-2200		2200-2201		2201-2202		2202-2203		2203-2204		2204-2205		2205-2206		2206-2207		2207-2208		2208-2209		2209-2210		2210-2211		2211-2212		2212-2213		2213-2214		2214-2215		2215-2216		2216-2217		2217-2218		2218-2219		2219-2220		2220-2221		2221-2222		2222-2223		2223-2224	
-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--

5

15

25

CCAAAACTNNGGTGGGGTTTTTTAAAAAGGTAACNTTTTCCTTTANGGGAACCCCCGGGGGGGAAG  
GCTTTNTTTGAAAANAACTTTGGGTNAGGGGTTTGGCCCCNTTTAAAACTTT

5 TTNAACAAAACCTGGACTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGG  
TCCCCTCCCCCTTGCCCCCTCCAGAGACTGATGCTGGAGCGTGAGTTGATTTTCTTGGCTCGATCTGTC  
CTTTCTGAGCTCTAGTCATAGCACTTTGCAGAGCATCCTGGGCACCCTGGTGGTGCAGCTGCAGCCTGC  
GGCGGTCTTAGCCCCAGGGTCTTTGTTTACAAAACCCCTCTGGTACTGTTGTGGTTTGTATTCTTCCA  
GTGTTCTCTCTCTGCTCTCTCTAATACTTCAAAAGTATCTTTGCTCTTTTGCCCTTTCCTTTGACCTTC  
10 TGTCTAATCCTGCTTTGGAATTAGCCGGTGTGGGGAGAGGTACACCATGTCGGANAGAANAAAGAGT  
GCCTGTACTGGAAGTGTTCCTATTACGTTTATTTTGCTCAGTTCTTTTTATTTATGCCCTTGGGGCC  
CAGGTACTTGGGCAGCCAGCTAACCTCCTGGCTAGNGAAGGAGACCAGGCNCAAAGTGAAACACCAAG  
GAAAGGTCGNGTGTNTTANAACTCCAGCAGANACCAAGCCCTGCTGCAAAATTGCAAGGCCANACC  
AAAGGGCCACACAGTTGCTCATAAGNGTAAATATTTGNNCAGNGAATAAATGAATGGTTTAAAAGG  
15 AAAAAAAAAAAAAAAAAAACCTNNGGGGGGGGCCCGGNNCCAAATTCNCCCTTAAANGGGGNNN  
NNNAA  
NN  
NN  
NN

20 TTGAAAACAATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GNNTNAACCTCNAGNANTTNAGCGCTCCNGCCCCAGGCTANTCAACACAGCNNGGGTCTCTCCTCCTG  
CTGNNGNTCTCTGCCCTCCACATCCTCATTTCTTATCCTGCTTTNCGGGGCCACTTTGGACAAGTCTG  
25 GTGGACTCTCCCCGNAAGGANNCCTGAATCTCTGGTACGACTGCACANGGAATAGTGACAACAAA  
NCGTGGGCCTGNANAAACGTCAGANAAACGGCTTGNGTAAGGNAGTNCAAGATCCTCATGGNGCT  
TTCCCTCATNCTNTGNTGCTGCTTTCATCCTGTATGTTCCCANCTCTACACCATGCTGGCGAGGA  
GGGCTATTNTATNCCACTGGCTTNTTCCANNATTNGCNCNCANCCNTGGCAGTGTTTACCGGGGNCN  
CTNNTNTACCCCATTTTCATGCCCCGAAANAAAATTNCTGGCNNNNCCCCGCCGTAGGGGGGCAANCNT  
NTGGGTAANTGGCTTCCCNCCNTGGCCCTTGGGGNGGNCCTTNNNCCCNTTNGCCCCTGGCCNAGCN  
30 GGNAATTAATCTAANNNTCCCCACTNNCCGNAAACCGGGNAATTNNAGGGGNTNCCCCCTCCCCTTT  
GGNTTNNCCCAANACNNAATTTCNNGCCCCCTATNCNTCNTNANCCCCNGAAAAANCCCCAANCCCT  
TTTNTTCTTTTTTTTNAATTTTNAAAANTANAAAAATANAATTTGTNNNNCCCCCCCCGAAAAAAAAAA  
NAAAAAAAAANNTTTNNGGGGGGGGNCNCCCNCCNCCCTTTNTCCCCTTTTNTGGGGGGGGCGTCNTTAA  
ANAACNTTNCNCGNNNTGCNCGGCCAACTCNCNAATTTNATTTATTTTATCCTNCAAATCTTTANAC  
35 CTCTNCCTATCATCCNCTGTCTCNCNTNANNCNNTCNTNCGCCTCTNTCNNTNNTNNCANNTANTANA  
CATTACTTNTGTATTTCNNTTTANTCNACCNTNNTCNNG

40 TNNNACAAAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GAATTCGGCACGAGGCTTCGGTAGCGACCGCCTCTCTACGCGGGTGTGAGCTTCGCCAGCCCCCTCCCC  
CAGGAGACCGTTGCACTCGGCCAGCCCCTGCTCCTTGGTAACCATGTGTGACCGAAAGGCCGTAATCA  
AGAATGCCGATATGTCGGAGGAGATGCAACAGGACTCGGTGGAGTGTGCTACTCAGGCATTGAAAAA  
GTATAATATAGAGAAGGACATTGCGGCCCATATCAAGAAGGAGTTTGACAAGAAGTACAACCCACC  
TGGCACTGCATCGTGGGGAGGAACCTTCGGTAGTTATGTGACACATGAAACCAAACACTTCATCTACTT  
45 CTACCTGGGCCAAGTTGGCCATTCTCCTGTTCAAATCTGGTTAAAAGCATGGACTGTGCCACACACCCA  
GTGATCCATCCAAAAACAAGGACTGCAGCCTAAATTCCAAATACCAGAGACTGAAGTCTTCAGCCTTG  
CCTAAGGGAACATCTNCATCTTTGAACCTTTGNTGNGTTTTGTACAGGGCATTCTCTGTACTAGTTTGN  
GGGTATAAAGCAATTAGTAAAAACAGCTTACATTTGGATTTATTTTCTATTCCATACCTTTTNTGNCCCA  
TTGTTTTTTCTNTTCAAAATCCATTCTTTAAAAAAATAAATTTGGTTGGAAGTGGGCGTTNAAAAAAA  
50 AAAAAAAAAAAAAAAAAATTTGGGGGGGGGNCNCCCGGNCNCCCAATTNNCCCTTNANNGNGNNNNNTTNTA  
AAANNN  
NN

55 AAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTC  
GGCACGAGGCTAGATTGGCCTTTNGACGATGGAGCGCCACCCCTAANCNNATTGNATATGATNGGCT

ANNCCTACTAAAAANCCANNTTNCGTGAANAACCNCGGTTGCTGTGNTGNAGTGCNTTNGNGTNGCANGA  
 TTGGNAAGGGCNCCTGTGCTACTTGCNCTTGCTTTGATTGAATGTGGAATGAAGTACGAGGATGCAGT  
 TNAGTTTATAAGACNNAAGANAANGGAGCNTTCNNTTNCANACNNCTGNTTTACCTGGANAAATAC  
 CGACCTATGATGCNATTNCTCTTCANAGATAACCANCGGGCATTGCTGNGTNCAGGTAAAATGAAGTGT  
 5 ATACGAAGGCTGACTTGATTGTAGCATTTACAGGGAACCTCTGGTACCTGGAAATGNGAATCTGGAAT  
 CTTANCTGTNTCATNAAAGTANTGATGGATTTCNGTACTCCTCANCCACTCTNCTAATGATTGTAAAAAA  
 GCAAAACACNANTCCCTNTATAACGNGAATNAAATGTNTAAGAAANGANNATGAGAANGATTATAGGG  
 GATTAATTNACTGANAGATGATTNTTGCTTCTAGNGCNGGAGTTTGAATTTCTGNCAGGATTGAATTTA  
 TTTCAAAANCTGCTGTCTTTTTTAACCTTTCTCAAAATAGGTNTCTAANGAAANCCANCAGAACATGATC  
 10 CTTTCAAAAGCCTCTGTTTGGGGAGCACACTTTCTTNTGCTNGGCNCATAAAATTNCCNTGCGGGGG  
 GAATTTTTTTTNTTTTTNNNGGAAACCGNTTTTTNNNNNNNNNANAACNTTTTTAANNCCCTNGANCCCTN  
 TTNTNAACCTTGGNACCNTTTGGNAAANAATNAAAGGTTTTTNGNGNNNNNNNNNNNNNNNNNNNNNN  
 NNNNNNNNNNNGGGGGGGGGGNCNNNCCCCCN  
  
 15 GCCTATNTGGAGCTNCATCNCNGTGGCGGCCGCTCTAGAACTAAGTGGATCCCCCGGGCTGCAGGAAA  
 TTCGGCACGAGGTTTCTTGGTCCATCAACCTAGCCTCTAAGTGGTGTGAGCGGCCTGAGTGGGTGCACT  
 TGGACAGCCGGCCTTTTGCCTCCCTGAGCCGTGACTCAGGGGCCGCTGGGTCTGGGCATCGCTCTGC  
 ACTCTCCCTGCTATGCCCAGGTACGGCGGGGCACACCTGGGATATGGCCAGAACTAGTCTGTCTTGTG  
 20 CTGGCCATGGGGCTGCTGGGCCCCCTGAACTGGCTGGGCTACCCCCCTCAGATCAGCCTTTTCTACATC  
 TTCAATTTCTCAAGTACACCCTCTGGCCATGCCTGGTCTGCGCCCTCGTACCCTGGCTGGTGCACATG  
 TTCAGTGCCAGGAAGCACCAACCATCCGCTCTTCTGACTCTGGTGCCTNCTGCACCCACCTNCCCTNA  
 CAAAGCCCATGCTCTGTGACCTCCACCCTTGGGAGGCAAGNTCCGTCCACTTCCAGCCCCCAACAACC  
 CTGCTCATGTTGAATTTTCTACTTCTNCCACCACCTGGTCACAAGCCCCAAAGAGGGGGCCTTTTCTCTT  
 25 CCAGGAAGGNCCTTCTGGCTTTTCTTCCAAATCCCCAAAGAACCAACGCACNCTNCAGAACAAACGGAT  
 TTCTGTAACTGGGAANGGGCTCGGAACAAACCCCAATAAAGCCCTTTCACACCCNCCCNAAAAA  
 AAAAAAAAAAAAAACAAAANNNCCCCCGGGGGGGGGGNGGNANANAAATTNNCCCCATAAANNANNGN  
 NCCCTNAAANNCCCTTTTTTTTTNNNNNNCCCCCCCCCCCCCCCCCNCCCNNGNNNNNNNNNNNNNN  
 NTNNNNNNNNNNNNNTTCTTNTAGTNNNNNNNNNNNNNNNNNNNNNNNCCNCCNCCCCCANNNNNN  
 30 ANNNNNNNNNNNNNNNNNNNNNNNNNANNNCCCTTTNT  
  
 35 NCNNNATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
 TCGGCACGAGGNCCCACCTGNACNTGNAGGCCANNCACCTCNAANATCCTCANGNACNTNNAGNCNGG  
 CNCATACNNCCGGTGNNTNNTNGTNAAAATNNTCCTCATNCTGATTGCNNNCTTNATNATCTTTGAGN  
 ACTNCCTTGCTGAACCTNNNNACTCTNANGCAATNCGTGGGGGTNNGGAANCNTNANNGNAGAGC  
 NGGNNNCCATANCTGCNNCNGANCCTGANCNGGGGGGNTCCGNGAGAANGGCCCCNTTTCCTGTNAC  
 TGCTAATACATGACCNCTGNCCTCTGTCCNCCACTCCTTGCTCTGGCCACCCATCCCTCACCTGACCA  
 40 CCCTACNGCCCATGAAACNCACNCGGANNNNGATTNNGACNCTGNTNTNAAGTGGTTNNAANGGATC  
 ANAAGCCAACTGATGNNCTNNNNGGNNANANTGTCTNTACCTNGAGATNTTATAAACCTCCCNAAC  
 CTGTCNCAGACGGGAACTTTGGCTACANAGNGGAGATGATGCCTTTCCCCACATTNTTGANATNAATG  
 ATANGANGGGAAACNGCCACATGNACCAATNTTCCCACNNGGTTAGAAATNNGANACTATTATTCC  
 TCTCTTTACCCACATGAGGCACCGGANCCCCTGAGCCCCTNNGGAGGGACTGCACAAANCCCCANAATT  
 NGGGCTGGCAAAATGAACTTTTAATTGNGGACGAAACGTGCCNGTCNCCCCTGTTTTGTTCCTCAAGTT  
 45 ACGGGCCTTGACTGGNCAGGCCTTCNATTTNCTGGGNCATGGNAAAAAATTTNCCCCTTTGGGGGGG  
 GGGNCCNGAANCCCCAANAACGCCCNTATAAAAAACNNNNNNNNNNNTTTAAGNNGNNNNNTNN  
 CCCTGGGTTTGTNTNTNCCC  
  
 50 GCCNATANGGAGNCGNATNACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGNAN  
 AAATTGNNAANGCTGNTGAGCTCTAACAGCACAGACCTNCCACTGANCATCGNGTGCTTCATGAATGA  
 CAAAGAACGTTCTTGGAAGANNANCAGGGCCCANNTGGAAAAANCTNNGGNCTGNCTANNTGAANAN  
 AATAAAANTNCCNTTNTTTTTGTGGANGGACCAANNNCACTTNAANNAAAAAGGANGNNANGNTNGNC  
 AAAANACTNGANGNCCNNNCCNAANTCCCACCCGNAAGAAAAAANCNCCAATTCTTTGGAAAAAGA  
 55 ANNCCNNNCCACCCNNNANNCCAAANAAGCCNTGGCCCAAGGGTGNGCCCTNCNTTGCNATCCNTT  
 TCCCCACATTTAAAGGTATAGANAATTTTGTCACTGNTGCNCAATTTCTTTCCANTATCTNTGGNNNNN



GGANCCCGATTTCAACAAATNCNCTANANGGGTTCCATGAGAATGTGNNTATATANAANCCACCTGT  
GCCTTTTTTCCACAAAATTTCTCGCTTCTCNTAAAANNGGGGCCCTTTTTGNGCTCGGNNCCTNTTT  
ATTNCTTGTCNTCAAGGAGGTTNCNCNATTNTNCGANTCNCNAAATAATGNNCCCTCTNTANTTTA  
NAAAAANATGTTTCCACCCCCAAGGNNGGNGGGAAACNANNTCTNCCTCGGNGNAGANCTCTAAAGNAG  
5 CTGACGGNGGATTCCCCCNGGNGTTNTNTTTCNTCTTTTNTTACNNGTNTATCGGNNGGGGGAAN  
AATACCCCCCNGCCCGANNAACAAACGTGGGTTTTCTTNTTTTNCCTCCNTTGGTCNTTTNTGTAA  
AATNATTCNGGCCGCCNTCAANAAATNTCCCTGCGGGGTCATAAAATTTTCATCNCNNTANNNNCAC  
AANGAATNCATGTTTCCCNCCCCNCCCGTTTCGNAAACCCAGATTGGTNNTTATAANCCNTCCGNGNN  
CGTGCCCCCG

10

GCCNATANGGAGNCGNATNACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGNAN  
AAATTGNNAANGCTGNTGAGCTCTAACAGCACAGACCTNCCACTGANCATCGNGTGCTTCATGAATGA  
CAAAGAACGTTCTTGAAAGANNANCAGGGCCCANNTGGAAAANCTTNGGNCTGNCTANNTGAANAN  
15 AATAAAANTNCCCNNTNNTTGTGGANGGACCAANNNCACTTNAANNAAAAAGGANGNNANGNTNGNC  
AAAANACTNGANGNCCNNNCCNAANTCCCACCCGNAAAGAAAAAANCNCCAATTCTTTGGAAAAGA  
ANNCCNNNCCACCCNNNANNCCAAANAAGCCNTGGCCCAAGGGTGNGCCCTTNCNTTGCNATCCNTT  
TCCCCACATTTAAAGGTATAGANAATTTGTCACTGNTGCNCATTTCTTTTCCANTATCTNTGGNNNN  
GGANCCCGATTTCAACAAATNCNCTANANGGGTTCCATGAGAATGTGNNTATATANAANCCACCTGT  
20 GCCTTTTTTCCACAAAATTTCTCGCTTCTCNTAAAANNGGGGCCCTTTTTGNGCTCGGNNCCTNTTT  
ATTNCTTGTCNTCAAGGAGGTTNCNCNATTNTNCGANTCNCNAAATAATGNNCCCTCTNTANTTTA  
NAAAAANATGTTTCCACCCCCAAGGNNGGNGGGAAACNANNTCTNCCTCGGNGNAGANCTCTAAAGNAG  
CTGACGGNGGATTCCCCCNGGNGTTNTNTTTCNTCTTTTNTTACNNGTNTATCGGNNGGGGGAAN  
AATACCCCCCNGCCCGANNAACAAACGTGGGTTTTCTTNTTTTNCCTCCNTTGGTCNTTTNTGTAA  
25 AATNATTCNGGCCGCCNTCAANAAATNTCCCTGCGGGGTCATAAAATTTTCATCNCNNTANNNNCAC  
AANGAATNCATGTTTCCCNCCCCNCCCGTTTCGNAAACCCAGATTGGTNNTTATAANCCNTCCGNGNN  
CGTGCCCCCG

30

AAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
CGGCACGAGGCCCGTCCAGCTCCAGCTGGTGACCAGAAGGATGTGGATGCTTCAGAAAAGAAGGTC  
CCAGAACAGACCCCTGAGCCTCCCCAGCTGGATTACAGCACCTGTGATCATTCCAGGACCCCAACAC  
TCAGGGTTCCCTCCCAAGGCTGATGGGAGGGGGGTGGAGTGTCAACCTCCTCTGGGGACCCGG  
35 CCACACTTGTGGCCTCCTGTGGGAGGGGGAACAGGCTGGCTGTTTCTTCTCATACTGCTGCCAGGCC  
CTGTATCTGCCACCTCAGTCTCCACAGCCTTCCAGTCTGNGGTCCCTCTTTCTGGTCCCCTCCAAGGG  
ACTTGCCNTTCGATCCAGTTGAATGCTCACTGGCCTTAACCTTTCATTGANGGAAGCCCCCTTNTTC  
AAGGAAGGGTCTGCTCACACCTGCCTTTNTAAGTTGGTTTGGCCTTGACNCCAAGGTGGGGGCCATTC  
AAGATTCCGGATTCCCACAAGTTGGTGAAATCCTGCCTGGTGGTTTTGGGCCCAACTTCCGTTGGTCT  
GGNGGGGCTTTAANGGGCCCCTTAAACACCTTTTTTTTTAAATTTTGGGGGGACTGGGCNATGCCCTNA  
40 AANAAAGNGGCTTNCCCCCAAGNTGGGGTGGNAAGGGCCAAAAAANNCCTTTGGATTNGTTNAA  
ANAANTTTTGANNCCAGGAANCCCTTGACTTTTCCTGGACCCCTNGGNTTTCAAACCATTTTNAANCC  
CCCTTTCCTGAAGGGAAGGGGTTCCCTAAACCCCTTTTNTTTCAAAATTCCTAAAAANGGAANAAAN  
AAATTGGNCCCCCCCCGGANGGAATAAGGGTTNCCACCCCTTAAACCNNTTTTNGGGGTTTTNANN  
45 NNAAANGGNTCCCTTTTTTTTTNT

50

TTNAACACAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
AATTCGGCACGAGGAGTANCAGGAGTGAAATCAAAGGATTTTATGATCCACCAAGAAGATTGCTGGG  
CCAGCGACCAAGACCATATGATAGCAATAGGAGGAAGAGGGGTTATTATGGAGCTGGGCGTGGA  
AGTATGTATGACAGAATGCGACGAGGAGGTGATGGATATGATGGTGGTATGTGTATCTAATGAACAA  
AGGTTCTGTTGTCAATTTCTTAATGTTCTGACACTTTGTCAAGAAATACAGAAATGGCAGTAATTTCA  
GTACCTACTAGGTTTAATAAATCTGTTTACATACAAATGTGGATTCCCATGGGCAGCTATGGGACTTGATT  
GATGCATGTATTGGCACCTAGTTTACCTACACAAAAATTTTAAAGAGATTGCCATGTTTTGACCTTTTC  
TGTTTGGCATCAGGATAAAAAATTTTATGTCTAAATGTGTGCTTTTACATAAAGTGTTAACTGCTTTTTT  
55 AATATACTATAAAATGGGGTGTGGAAAACCTGGTTGGAGGGGTGCAAACTTGTAACAATATAAGTT  
AACCATAGTGCTTGNCANAAGATACATTTTTATAAACTAGATAATAAAAGTTATCTCTTGAAAGCTTAT





ANCNGNCNANCGGNATGAAGTNNATCANATNCTNTNTAANNAGTGCAANCANNCCNNNNNGGANNAG  
 CNNAGNTNTATNCTCNAGNNNANNGNANCANCNCNTCAGTNTAANNAGATGNANCAGCTGTGAGNTG  
 AGGCNGNGCGNTGNGTACAGAGNTNTNTGTATAGAANCNCANCNTGTATGNAGTCTGAGANNATCNN  
 ANATGNNNGNNTGTNTCTCNNTATNNAGACTAGANTNNNACTNTCTGAGANGACATCTATGNTNGA  
 5 NNNANANANANACNCGANANANATNCGAGATNNGATATGACGNTTNTNTNTNCCNACNNATGTATNT  
 ATNCNGNNTCTCANANGAGATGACNCACNACNCTNNCTCATACTTNTCTNTNCGTNCNNNTGTCTANN  
 NTATGTGAAGTATACACTAACGTCNTACATGTNANATGATNTACNAGCNGNGGANNNANTGACNAG  
 TGTGACNAGACNACNCTNACTAGNGTCGATAGNCNANATNNNGNNAATANNNTCGTTNTCGCGTATN  
 AGCGCG

CCGCCNCCNCTCNTNGANNNTNNTTNNNGTNNNTNGNNGTNNNNNTANNNNNNNTNNTNNNNNNCCTCT  
 CATCNCTNTGGNNGNCGGNGGCTCNGNNGNTNTNNTTNCNNNNCNGGGGGNGGTNNANGTGTNTNG  
 15 TNNNNNNNNNTTNNAGCCCNATAGTGGAAGTCGTATNNCNAAGGCGAGTNCNCTCTNAANCTAGNG  
 GGATCCCCCGGACTGNCNTNGANTNTNCCGCCNACAGGNNCTCTNNNTCCCTNCNCTCCTTANNTCTTTTG  
 TNCTNNNTGGNGCNCNCCNNCTCNTNTNTNTNCCNCCCTACNGCCNANNCCNNCTCCCCCNNTNTC  
 CCNNNCATNCCCCGCNCCNNNCCTCNNTTCTCTCCTCCNCCCNANCCNCCCTCNCNNNNCTCTCGAC  
 NCNTNGTNGCNCNTGTGNTCAGANNCTGTCCCNNTNCCCNCTCCAGNGCTCTTCCNNNTCNAGN  
 20 TCNCCCGNTCTCNNTTTCNAGTCCNCTNGACNNTTGTNNACNCCNCTNGTCCNNCTCCCNNTTGA  
 CNCCNGCNCCTTNTCGCTCCNCCNCGNNTNTTCCNNNTACTTTCCCNCTCCNNNCACNCGNGTNTCCG  
 CCNTCTNCCCCCTCCNTCTANAGNCNCCCTGNTCCTNNATNCNNTNNTCTNCTATNCCTNNACTCN  
 NNTNTCCCNACAGGNNCTGTNCCCGTGNCGCCNCTNCCNCTCANNTCTNTCNCNCCNTCACCNGCT  
 NCNTCCCNACNNGAGCCCTCCTNGTNTGNNCCNACAGNCCGNTTCCCNNGACGNCNCTNTCCCNCA  
 25 TTTTNCNACCNGTNNCCTCGGNACNCCNCACTCCCCGCGCNCNTNCTCNAACNCCNCCNNGNANCCACT  
 NCTATNCCTNNGACTCCACNGCTTNTGTGCGNNTTGACCCCCCTNCNACGNCNTCCNTAGCNCNCCCTC  
 TTGNNTTNCGATCCNCCNNNNGTCCNGATGNCTTCCNGTTCGCCGTTNNGACTNCCGGAGNTTAGNC  
 ANTNTTGTGNCCTACNNTTCCCTTGATCNCNCCGCTNNNGCCNCGGNGTCCCTCGANCGNACCNCTG  
 GANGNCCNCGNNTNTGNCGGCNCNCCGNTCAGACCGTNNCTGAANNNTNCTCTNCTTANCCGACN  
 30 ATCAGCACCACNCGNCCNNTTCCNCGNACCGNCTCGNCTNACCTNNCCNCCNCTACCGTAGCTCCCN  
 AGCTCCNCTACCTNTGTNATNNAACACANACGNTGCTNCGCAGTATCNCNCCNCGTAGTNCNACG  
 CNNNTNTCCAGCTCTGTNAGGGTCTCTGCGTATCAGCTCCCGCTGGTCCGNACTCCCNATNTCTCTC  
 TCTNCTTNTNCCGCCACTTAAANGAGNTACNAATNGATTACNNATNTCACGTTACTANCTCGNNGC  
 ACGNGCNGCCCTATGCTCNGNANNNCCCTCTACNAATGGANGTANCTTNCNCAAGGNATCTTTTCGNA  
 35 TGGANCNACCGNACCNTNNGTACCAGCGCCTTAGGNTGGCGCTCACNCTTGNTANNTNCGNNTCTTCGC  
 TCTTNNCNNNTCNTCGCNCNNCC

GCCCTATANNAGNNGTATTACAGNGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCGT  
 TCGACAGATAGCCGTAACCTTCTGTGCTGTGCCAGCCGCATCCCTGAGACAAGATGGTGAAGGTCGGAG  
 40 TGAACGATTTCGGCCGCATCGGGCGCCTGGTCACCAGGGCTGCTTTAATCTGGCAAAGTGGACATC  
 GTCGCCATCAATGACCCCTTATTGACCTTCACTACATGGTCTACATGTTCCAGTATGAATCCACCCAC  
 GGNAAGTTNAACGGCACAGTCAAGGCATANAACGGNAAGCTCGTNATNAATGGAAAGGCCANCANC  
 ATNTTCCAGGAGCGANANCCTGTCAACATCNANNGNGGTNATGNTTAGAGCTNNAACTNNTGGCGGA  
 45 ATNTTACTNNGGANTTAACTACACATGTGANAANGNGTNGGACTACTTNGAAAAGTGTGCCCNAA  
 ANAANGGTGNATNAATCTCAGCNACTTTTTTGTTCGAAGCCCCCATGNTTTTTGNATTGNGCTNTAN  
 AANTCACTNANAAAGTTTATACANACNTCCCTTANAAATNNGTCNCGNTAATGTTNTNTGTGNAAA  
 CTNAAACTGTNTTNTCCCCCCCCTCNNTCAANNNTNCATATCANNTANAACTTTNTGCNTNTTGGGA  
 NGGGACATNATNNACACATTNGGGCATANCCATTNTACTTGTACCCCCANNAACATANGTNGGTTNA  
 50 NNCCTCNTNNGNNGTAANNTCTNNAACNTCTTTTNNNTTCCCTNNNGNGGNTTNNNTCNNNAATAATAC  
 CCNCTCTNNTCTTANTTATTGCGCTNNTCTNCCNANACATNTNGNCTNATAGACNCTTCTCTTANCN  
 TNNANCCNCCNNAATNTNATNTNNTTNNCNGTNTGNNCGTNTCTCNCTATNCTCTANCATATTT  
 TATGNNGGTTGNATNNTCTTNAACNTCANAAACTGNATNNAACCTCNCNCCNACGNNCNTCTTA  
 TAATACTNNCACTCNATTNGNNTNGNNAATTGTTNATGACANGG

AGCNCTATATGGAGNTGNATNNCAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCC  
 CCGNTGGACCCAAGGCCCCCGTGGTGACAAGGGTGAGACAGGCGAACAGGGCGACAGAGGCATTAAG  
 GGTCACCGTGGCTTTTTTTGGTTTTCNAGGGTCCCCCNGGCCTTCCNGGTTTTCTNNGGNANNANGGNCN  
 TTCCGAANCNTTTGNNCTTGTTGNNCCCNNGGNNCCCCCTTGNTTTTGTGNTTTTCCNNGGNAAAAANGN  
 5 NNTAATNGNNTTCCAAGGCCCATTTGNNCCCCCTNGGCCTTNAAGGNCCAATNGNGAANNTNGNCCTN  
 GTNGNNTTCCNNGGCCTTCTNGAACCCCTNGGNCCCCANAGTCCTTCCAACGGGGGGGTATACANATT  
 NAGANTTTTTCTGTGCCCAAACACACTTNAAAAAAAAGGTTTACNATGNNGGCGCTATATATACGNGC  
 TTTANATNANGCCATNTGTGGNCCGANACCGANCATCTAANGTGNNAAACACCACTCTAAANANCTTGN  
 CNCNACATATAGAAAANTTCGNGACCNTTAAGGGCANCCAAAAAAACCGCGCCCNATGTGGTGAAA  
 10 TCTAAAAATATGCCNCTCTTTTTTGTGANAAGAGCNGAAAAATTGTGTTTTTGGCCACAAANAGGTGGT  
 GNACNTGGNATGACAATTAANAGNGGTTTTTGGNACAATNGTGNAACCCGGAAGAAACNNTTGT  
 NTAANNCCNNCTNTTACCCACCAAGTNGNGCCNCNAAAAAAAATGTTGTTTTTATTNANNAACAC  
 CCCCCGAAANAAAAAGGACNCTNNTTTTNGCTNCCGAAAAAAAATTAATCANCCGGAATTTTTACTNN  
 TTTAATAATTTTTGGNCCANAAGNTCCAANCCTTTCNNGANNGATGGGGGNATCCAAACAAGGTTNT  
 15 TTTTCTTGCCGCANGGNACAACCAAGGNNNTCTCCAAAAAAAATTTNTTCTACTTNT

AGCNCTATATGGAGNTGNATNNCAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCC  
 CCGNTGGACCCAAGGCCCCCGTGGTGACAAGGGTGAGACAGGCGAACAGGGCGACAGAGGCATTAAG  
 20 GGTCACCGTGGCTTTTTTTGGTTTTCNAGGGTCCCCCNGGCCTTCCNGGTTTTCTNNGGNANNANGGNCN  
 TTCCGAANCNTTTGNNCTTGTTGNNCCCNNGGNNCCCCCTTGNTTTTGTGNTTTTCCNNGGNAAAAANGN  
 NNTAATNGNNTTCCAAGGCCCATTTGNNCCCCCTNGGCCTTNAAGGNCCAATNGNGAANNTNGNCCTN  
 GTNGNNTTCCNNGGCCTTCTNGAACCCCTNGGNCCCCANAGTCCTTCCAACGGGGGGGTATACANATT  
 NAGANTTTTTCTGTGCCCAAACACACTTNAAAAAAAAGGTTTACNATGNNGGCGCTATATATACGNGC  
 25 TTTANATNANGCCATNTGTGGNCCGANACCGANCATCTAANGTGNNAAACACCACTCTAAANANCTTGN  
 CNCNACATATAGAAAANTTCGNGACCNTTAAGGGCANCCAAAAAAACCGCGCCCNATGTGGTGAAA  
 TCTAAAAATATGCCNCTCTTTTTTGTGANAAGAGCNGAAAAATTGTGTTTTTGGCCACAAANAGGTGGT  
 GNACNTGGNATGACAATTAANAGNGGTTTTTGGNACAATNGTGNAACCCGGAAGAAACNNTTGT  
 NTAANNCCNNCTNTTACCCACCAAGTNGNGCCNCNAAAAAAAATGTTGTTTTTATTNANNAACAC  
 30 CCCCCGAAANAAAAAGGACNCTNNTTTTNGCTNCCGAAAAAAAATTAATCANCCGGAATTTTTACTNN  
 TTTAATAATTTTTGGNCCANAAGNTCCAANCCTTTCNNGANNGATGGGGGNATCCAAACAAGGTTNT  
 TTTTCTTGCCGCANGGNACAACCAAGGNNNTCTCCAAAAAAAATTTNTTCTACTTNT

TTTANAAAAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 AATTCGGCAGCAGAGGCNNTNCCCATCNNNNANNNCTGNNGGANTNATGGGGACGNTTGAAANACANA  
 CTCCTACATNCTNCCNTANACCGCCNAGGTGGNNCANGTGACGATGTGATCANAGGGTGGANCC  
 TGNNAAATCACGAANANTNCCANAACNTNNGGACCTATGCCTTAAGGAANGGGTAGNCTTAGCTCTGA  
 35 TANTCCAGGTANTNAATTGTNNCATTGGAAATNNANCATNGANGAGCCTGGCNCTTNTATGATCATG  
 GNTCCATGGNATTTAANCNTTTAAACNCGANAACNNCNCNCTTNCCAANTTTTAANACTNNAATTCCA  
 TCCTTTNTTNATAGNNNNCAATNNTNNTTTTTGTTGNNCTTNTNTNTAAAAAAAACAATANNTNTNNN  
 NTTNGNTTTTNCANATCCCAAANNCCNTTTTTTTTNTNGNAANTGTTTNTNTNNTNNTNNTNNTNNT  
 TTATTCCTTNTCTTNTNTGTTGTAATNCCCNNTNNTNNTNNTNNTNNTNNTNNTNNTTCTTCCANTCC  
 40 NTCNNNTNCGTTTANNTCNNTNNTCNATNTTTTTTNTTCTACTNCCNNCNCNTTAAATNTNTGTGNTN  
 NTTTTCTTTCCTTATGTACCTNTANCNTTTTTTTNTTATNTCTATGTATNTNNTNNTTATTTCTCNCNT  
 TNANTATAAATCNANNCTNNNNNTNCCACTNNTNNTCNNTNCGATNTNACCNTTTTTTNTNCTCCTCC  
 GTCGTTTNNCNAATNNTAANNNTTNTCTCCTNTTCAAGTCATNTTCCNCCTTCTTNTNNTCNNTNTT  
 45 CNTTNNNTATCAAANTTNANTATANNCTNTCNNTTTTTCTNTCTNTATNTNANCTNTTTTTNTNCTN  
 AATATTNCTACCANTNATTNATANTTTNTTNTNCTTCTNCAANTTTGNTTATCCNAGCTNNTNTCTC  
 50 TTNNTGCTNNTNNTCNNGTTNNNTCNNTTATANCAGTTTNCATNTNNTNCTNCT

TTNNACAAANCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGG  
 CTGGGGCTGCGTGGGGATTTTGTAAATGCCGACCGGAGACTTTGATTGGAAGCCAGTTGGGGCGGACCA  
 55 GGTGGAAGAGGAAGGAGAGGACGACAAATGTGTACACGAGCTCCTCAAGGGGATCCCCCTGGCC  
 ACTGGGGATACCAGTCCAGAGCCTGAGCTACTGCCGGGAGCTCCACTACCGCCTCCCAAGGAGGTCAT

CAATGGAAACATCAAGACAGTGACGGAGTATAAGATAGATGAGGATGGCAAGAAGTTCAAGATTGTC  
CGCACCTTCAGAATTGAGACCCGGAAGGCCTCAAAGGCTGTGGCAAGGAGGAAGAACTGGAAGAAGT  
TTGGGAACTCAGAATTTGACCCACCGGGGCCCAACGTAGCTACCACCACAGTCAGCGATGATGTATCC  
ATGACATTCATCACCAGCAAAGAGGATCTGAAGTCCAGGAAGAGGAGGATCCAATGAACAAGCTCA  
5 AGGGCCAGAAGATAGTGTCTTGGCGAATCTTGCAAGGGCGGACCACTGGACCACCCGCTTGCCCTAC  
AAGGACACGCTGGGGCCCATGCANAAGGAGCTGGGCCGAACAGCTTGGGCCTGTCCCTGGCGAAAAA  
GGAAAANCTCCCCGGANAGCTGGAACCTGGGCNNGNCCCTTAAACAAGAATTGGGAAGTACGTTGC  
CTTCGANCTTGGCCAAAGGGGCCAGCCCCGNGGGGGAGTCCNTGCACCCAANCCGANAAGTATG  
ACAATGCCCCCTTTCCNGTTANCCAACCTTTTTTGGAGACCCTTCNGGNAACCCACCTGGAGGAACCTT  
10 TTCCGGNCCTTTNGGTTCCNTTTTCCCGATTTTANCTGGGAAAAGGNAAAAAACCCCGGCCN

TNNNNNAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAAGTGTGGATCCCCCGGGCTGCA  
GGGCCTAAGTTTCGACCCCAACGAGATAAAAGTTCGTGTACCTGAGGTGCACCGGTGGGGAAGTCGGTG  
15 CCACGTCTGCCCTGGCCCCAAGATCGGCCCTCTGGGTCTGTCTCAAAAAAGGTCGGTGATGACATC  
GCCAAGGCAACTGGTGATTGGAAGGTCTGAGGATTACAGTGAACTGACCATTGAGAACAGACAAG  
CCCAGATTGAGGTGGTACCTTCTGCTTCTGCCCTGATCATCAAAGCCCTCAAGGAACCAAGGGAC  
AGAAAGAAGCAGAAAAACATTAAGCACAGTGGAACATTACTTTTGATGAGATCGTCAACATTGCCC  
GGCAGATGCGGCATCGGTCTCTAGCTAGAGAACTTTCTGGAACCATTAAGAGATCCTGGGGACCGCC  
20 CAGTCTGTGGGCTGCAATGTTGATGGCCGCCACCCTCATGACATCATTGATGATATCAACAGTGGCGC  
AGTGGAGTGCCCCGCTAGTTAAGAACTGCAAAGGAAAAATAAGGACCATTTGACAACCAAAAAAAA  
AAAAAAAAAAAAAAGTGGGGGGGGGCCCGGNCCTTATTTNCCCTTATGGGGGGGGGNNNNNTNAAA  
AANN  
25 NNN  
NN  
NN  
NN

TNNNACAAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAAGTGTGGATCCCCCGGGCTGCAGG  
AAAAATTGTAAACAATGCATTCATCGACCTTCCAGCCCCATCAAACATTTTCATCATGATGAAATTCGG  
TTCCCTCCTGGGAATCTGCCTAATCCTACAAATCCTCACAGGCCTATTCTAGCAATACACTACACATC  
CGACACAACAACAGCATTCTCCTCTGTTACCCATATCTGCCGAGACGTGAACTACGGCTGAATCATCC  
30 GATACATACACGCAAACGGAGCTTCAATGTTTTTTATCTGCTTATATATGCACGTAGGACGAGGCTTAT  
ATTACGGGTCTTACACTTTTCTAGAAACATGAAATATTGGAGTAATCCTTCTGCTCACAGTAATAGCCA  
CAGCATTTATAGGATACGTCCTACCATGAGGACAAATATCATTCTGAGGAGCAACAGTCATCACCAAC  
CTCTTATCAGCAATCCCATACATCGGCACAAATTTAGTCGAATGAATCTGAGGCGGATTCTCAGTAGA  
CAAAGCAACCTTACCCGATTCTTCGCTTCCATTTTATCCTTCCATTTATCATCATAGCAATTGCCATA  
AGTCCACCTACTATTCTNCACGAAACAGGCTTCAACAACCCAACAGGAATTTCTCAGACGTAGACA  
40 AAATCCCATTCACCCCTACTATACCATTAAGGGACATCTTANGGNCCTCTTACTAATTCTAGCTCT  
AATACTACTAATACTATTCGGACCCGACTTCTTNGGAGAACCANATAACTTCCNCCCAGCCNATT  
CAANTTAAAACACCCCCTTAAATTAACCCGGGGGGAACCTTNTTANTTGCATTCCNCAATNTTA  
CGAAACAATNCCCCAAAAAA

NNNACTGGAGCTCCACCGCGGGGGCGGCCGCTCTAGAAGTGTGGATCCCCCGGGCTGCAGGAATTC  
GGCACGAGGAAAAGATCCAAATAAAGAAAAACAAGCATTTGTGAAAACAGTTAAAGATCAAGCTTCT  
GAAATTACAGGTGACAATGATGCTCACCAGAAAGTTGTAAGCTCCGAGGTCTTCATCACAGAAATCTTCT  
TCCTATTACCAATGTGTATAGAAGAAGGAGAAAAGCCCATGGTGATATTGCCTTACATGAATTGGG  
50 GGAATCTTAAATTGTTTTACGGCAGTGCAAATTAGTAGAGGCCAATAATCCGCAGGCAATTTCTCAA  
CAAGACCTGGTCCACATGGCTATTGAGATTGCCTGTGGAATGAGCTATCTGGCCAGAAGGGAAGTCAT  
CCACAAAGACCTGGCTGCTAGGAAGTGTGTCATTGATGACACACTTCAAGTTAAGATCACAGACAATG  
CCCTCTCTAGAGACTTGTTCCTCATGGACTATCATTGTTTGGGAGACAATGAAAACAGGCCGTTAGG  
TGGATGGCTCTTGAAAGTCTGGTTAATAATGAGTTCTCCAGCGCTAGTGATGTGTGGGCCTTTGGAGTG  
55 ACGCTGTGGGAACTCATGACTCTGGGCCAGACACCCTACGTGGACATCGACCCGTTTGAGATGGCCGC  
ATACTTGAAAAGATGGTTACCGGATAGCCCAACCAATCAACTGTCCTGATGAACTATTTGCCCGTGAT



CNTTCNNTCNTNNCNTANNNCTTTNCNATCTCTTNTNCCCCTTCNTNNTTNNNTNNTTTNTTCATTA  
TNNCTTTTTCTTNNNTTTTANNNANTNANTATNNTNTTTTNCCTTCCTNTNTCCNTANNTNATTNCNCNN  
NTTCTTTNTTAGTNNNTCNNNTCTCTNCTTANNTTTNTTNNNCTCTTCNTTTNNNNCTCTNANNTTCNC  
NTTNTTCNNNCTNNNNCTTNNNTTNNNNTNCNCTTNTTATNNTTNNNTTATNTTTNTCCTTTNNNTTNT  
5 NANTTTNANTTNNTTANNNNNNAAATTATCNTTTACAGNNNTNTTTANTCTACTTTCTCNNTCTCNAT  
TCNNCNNNAAATNTNCNNTTNTNCCNCANTNTCNNNTACNTNTTCTNTCCTNNTCTNTNNTANCG

TTNAGCCCTTATANTGAGTNGNANTTACAAGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGC  
10 AGGCTGCACGTCTAGGCTCGCCCGCGCCGGCTCCGACCAAATCCGATGGGACTCCGTGATGCTTCTGT  
CCTTGGCCTTTAACGNAAAAACNGTCCAAAAANGGNAAAAAGNGTTGNNGGNGGGGAAGNAGGGGGNC  
CCCCTTTTCTNGTGGNCNCGGGNNGNAGGCCCGTCTTTATTNTCCTNCCNATNCCNCTTNTNCCCATN  
CCNNTAATTTNTCTNGTCTGTCNATTCCNTAANNCTCTNTNNTCAAAAANCTTTNTNNGGANTAN  
TGCTTCTCTTTNNGGANNAANCTTCTTTTTTTTACCNCTTGNNCNGGGTTTTNCTCCNTTTTATTNTCN  
15 TCCNTTANNCTCCTNTNCTATTNTTNTCANATTNNTACAGTTCNCTNTNTTTTCTCNTANNNATAANN  
AANANTNNTCTTTCTNNNNGGNNCNNNTCTCCNCTCNTNTNNTTTTATTNTTNGCCNACTNTNCT  
NAATCCCTTNTNTNCTATNTCTCTNCCCNTNNCTNTCCCTTTNTNNTTNCNNNNCTNTTNCNCTNTCT  
CNTTCNNTCNTNNCNTANNNCTTTNCNATCTCTTNTNCCCCTTCNTNNTTNNNTNNTNTTTNTTCATTA  
TNNCTTTTTCTTNNNTTTTANNNANTNANTATNNTNTTTTNCCTTCCTNTNTCCNTANNTNATTNCNCNN  
20 NTTCTTTNTTAGTNNNTCNNNTCTCTNCTTANNTTTNTTNNNCTCTTCNTTTNNNNCTCTNANNTTCNC  
NTTNTTCNNNCTNNNNCTTNNNTNNNNTNCNCTTNTTATNNTTNNNTTATNTTTNTNTCCTTTNNNTTNT  
NANTTTNANTTNNTTANNNNNNAAATTATCNTTTACAGNNNTNTTTANTCTACTTTCTCNNTCTCNAT  
TCNNCNNNAAATNTNCNNTTNTNCCNCANTNTCNNNTACNTNTTCTNTCCTNNTCTNTNNTANCG

NNAAAAGCTGGAGCTCCACCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAA  
TTCGGCACGAGGGTTGGTTAGAGATGCTCTTGAAGACAAGAGAGATAAGAGGTGTAGAGCCAAGTC  
TTCTAGGTGGCTTGCCAGGTCACTCTACCTCTGGCCTCTGATTCTCAACATACATACATGCTG  
CTCTTGTAGTACAGNGTTGATTCTCTGAAATTANCCGCATGCCTGCAGCTTGCTTCGTCTGAGGATA  
30 ATGTCACCACCAAGAATGGCTGCTCTGACCATTGCTGGGGCTTTCTCATGGCTTTTGAACAAGGAN  
GCTGGGCANCCATAAAATANTTCCACCNTTACNGCATNGGTTATGCCTTGGNNGGAAGGGCGCTGGNA  
TACTTTTCACTTACAATTCTTAAGAGAAAGANTAGGGCCTTACCTAATCCAAGNCATTAAAAATTA  
AAATGGNCTTNAAGNNTTGGANGTTTGGACCAAAAATTTNTTTTGAATTTAACCCCTGGCCCAAGTAAA  
TGGTTGGACNCCNAGCCAGTTNTTAATNCNGGNCCAAAAACCTGAANGGANCGAATNATTANCTGC  
35 NNGGTACCCATTGACNTTCTAACTTCTTNTTGGCCCCCTTATNGCAAATNCCNTTAGGAATGAAAAACCT  
TTTGGGATTGGNGAACCAACCTGAAANGGGANTTCCAAGNCCTTTGGTTGAAACCAAAANACAANTTC  
CTNTTGGCCCCANGGGAAACCTTAAAAATTAATNTNCCCTGGAAACCCGGCCTNNGGGGCCATNCCCA  
AAAAAACTGGGCCCTTTAGGCCATTTNTTTTAAATTCCTATAAAATCNGGNCCTTTGGGGNGGAAACCT  
GGACCCAAATGGGTGGGGTNGGGTTTTTTTNCCTTGGNNTTNGGGAANGGGTTTTTNCCTTAAAGG  
40 TTTTNCCTTCTTNTTTTGGGAANGGGGAAATTGT

TTNAACACAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
AATTTCGGCACGAGGATATCNCACCTGGTAAAAGAGATGCAGTTGAAGAAACCTGCTGAGTTGAAGATT  
45 CCTAAATTTACTTTAAAGGAATAATCTGGGTTTCTTAACTGCAGGGGTTTTGAAGATATGACATCCTA  
GAGTAATATCAGAGGATACTTGAATTACCAGGGGCTAATTTAGAAAAGAAATTGTTCTTTTAAAGG  
AAAGAAATTTAGTAAGAATAATCAGATTGGCCCAAGGAGCAGGTGTTTACAGAGTGTACTGAGTAATA  
TTACTACTAAATACTTAAAGTAAATAAGTAATTTTAGGAAATGTCTTGATTGAACAAAGTTATTTCT  
TTAGAACAGTTTATGTTCTATCAACGATGTTTAAAGTATTTCTATCAATTATGGAAATCTCTAGTTGAAA  
50 GAATTCTGGAATTCATGATAAGGAATCAAGATTTGAAACTTTGAAATTTACTGAATAGTTGCTAAT  
CTATAAAGATGCTTTTTTAAACATTGTACATTTAGGAAACATGGGATTGGCCTTATTTTATACATACTTT  
TAAATATTGNCATTGCTTAAAGACTTTTCTTGAGAGTGAATTACCTGGGAATAACATAAAATTCATGCA  
ATTTTAAAGTATTTGCTATTNAAAACAGGTACCTTTAATTGNGGGATATGAATCTGACTAAATGNGCTN  
TTACCAGGNAATACTATGNCATTCTACCTTATCNTTTTGGAAAGGTATTGCTTGAATGTCCTTAAAGGT  
55 TTCTACCNCATAGNATTCTGGAAGTTTTTCCAGTTTGNNTTCCNCTGGAAAAATGGGAGTGGAAA  
TTTTTCCCAAACTTTTACNTTTCAATTAACCTTTAGGAAGA



TTGAANACAAGCTGGAGCTCCACCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
 5 GGNNCAGNTNTTATGNTTTTNTTACCGNNAACCTCANNNTNNNCAGGGGCNGATTNAAANCTA  
 TNNGTGNGTCGNANNANATANNNGNTTTNTTNNNANAANGNNGGNCNNAANTNGNGGGNCNAGGG  
 NAAAAACNNCCCNTTNNCTTCNNNANNGNNGGAAAGGNCNTTACNCNCCCNTTTTTTTTTTAAAAA  
 NGGNNCNCNNNTTNACCCCCNCNNNAGNANNNTTNCCTGGGAAAACCGGGNANNNTTNAAGGG  
 CNTNCCNNAAAAAANCCNNTNCCTTTNNNAAAAATTCNNTTTAAATNAAAAGNNCCNNANTTNNCGGGG  
 10 NANNTTAAAAANNAGNTTTTNNCNCNCCGNTTTNTANCCNNNAANAAAAACCCNTTAAAAANCNGNTTG  
 GGGGGGAAATTTTTNNNTTTTTTTTGGGAANTANNACNNNNAAANNTTTGNNAANGNTNNGNTTGA  
 AAAANANTTTTCCCCCTNAAATNTTTTAAATTCAAAANTNNTNTTTTNNGGGAAAAATTTTNNGGGA  
 AATTTTTCCNNACCGTTTTTNGGGGGGGNNAATTTTTNCCAATTAGGGGNNCCCCCTNGNNTGGAATT  
 TCTGGGAAGNNGGGGNAATTTTCACTTTTTCCCCAAANGANAAAAANGGNTTAAAAATTTTTTTTCCCC  
 15 CCNCAGAAACNTTTTNNNNCCCTTTTTNCCGNNGGGGGGGGGGNAAATTCGGGGGCNCTTTTTTAANG  
 GNCCCCCCTCCNGTTTCCCAAAAAANCCCCNNTGGGGGGGGCCCCANNNGGTTTTTTTNCNCTTGG  
 GGGGGGAANTTNTNTTTTNAAAAAAGGGTNTTTTTTTTTTNCCTGGGCCGNGGNNGGGGNTTCCCCNG  
 GGNTTTTTTTTTTTNACCAAAAGGGGGGNGTTTTGGTTNCCNNT  
  
 20 TNNNAAAACTGGACTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
 GCTGGANGNTGCATGCATTGCCGCGTGTGCGCCAAGCAGCTGAGCGAGTTGTGTACCGAGCGCGACG  
 CCTGCGATCCGCACAAGGGCCTCTTCTGCGACTTCTGGCTCCCCGGNTCAACCGCAAGATNGGTAGTG  
 TGCACCAGCTAAAGATGGTGCCCCCTGCGTTTTTCGGAGGAACTGTGTACCAGAGCGGAGAGTCTTTCC  
 25 AGAGCAGCTGCAAATACCAAGTGACGTGTCTGGACGGGTGCGTGGGCTGCGTGCCCCCTATGCAGCGTG  
 GACGTCCGCTGCCAGCCCCGACTGCCCTTCCCTCGGAGGGTCAAACTGCCCGGGAAATGCTGCGA  
 GGAATGGGTGTGTGATGAGCCCAAGGANACACCGTGGTGGGCCCTGCGCTCGCAGCTTACCGGCCGG  
 AAGACACGTTTGNCCCAGACCCAACCATGATCCGAGCCAACCTGCCTGGTCCANACCACAGAGTGGAGT  
 GCCTGTTCCAAGACCTGNNGAATGGGCATTTCCACCCGGTTACCAATGACAACGCATTCTGCAGGCT  
 GGAGAAACAANAGCCGCCTCTGCATGGTCAGGCCTTGCAGAACTGACCTGGAGGAGAACATTAAAGAAA  
 30 GGCAAAAAGTGCAATTCGGACCCCCAAAATCTNCAAGCCTATCAAGTTTGAGCTTTTNTGGTTGCNCC  
 AACNTGAAAAACNTACCGGGCTTAAATTTTGGGGAATGNCCCCAANACGGGCCGGNGGTTGCACCC  
 CCCCCAANAACCCCCACCTTTCCCGNNGGAGNTTAAAGGGNNCCCGGANGGGGGAANGGNTNTTNA  
 ATNAAAAACCTGNAATTTTTTAATNAAAAAACTTGNGCCCCTNNN  
  
 35 GCCTATNTGGAGCTNCATCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCTTG  
 CTACCTTCTGCCACCGTTCCATGGTCTCTGGAAATCCTTCCACCAATGAAAGCCTTCGGTCTGGCAT  
 TGGCCTTCCACCTAGACCGGCTTTGCCCTCTCTGCCATCCTCGGTCTCCAGAGACCACACTGCCTG  
 TCACAAAGAAAACCACCACCTCGGGCCTGCCAGCCATCAACTTGAAAATCGGGCCAGCTGTCTGCTG  
 40 CTCACGTCTCCCAGGTCCAGACCAAACGGGATCAACAACCCACAGTGGTGACTCAGTCTCTTACCCCA  
 GGAGCCAAAGCAACACAAAACAATTGGTCAAACATCGTTGGGTCCGATTCTGAGAGTAGGTGATTCT  
 AGACATGTCTTTAGGTGACCTCAACTACCTCAGGTTTGAAGGCCCTAAATTAAGCTGATACTACTCA  
 TGGGGACAGACCGAGGAGGGTTCCGGAGAAATCTTGGTGATAACGCACTTGTCTCAAACTTACAACAA  
 ACTCACGTTTCGGTTTGCAGGGGGTGGGGTTGGGGTTTGTTTTTCTTCTGTTTTTAACCTTTTCCCCCA  
 45 AATTTTCCATTAAAGATAGTTCCACAAATGAAATTTCAATTTCTACTGAGTGCCTACCTTCCAGGGG  
 CAGGTANNCCCTGGGNTTGTTCCTTCCAAGCAGTACTTTTATTATNGGNTATTAANAACCTTTCTTT  
 GTATAATACCAATTGGNATCTGTGCTTTCAATTTTTTCAANTAAANACCTTCNAACCTGGCAAAANAA  
 AAAAAAATAATNCNGNGGGGGGGGGCCCCGGTACCCANNANGNGNCTNNNANNGTGACNTTTTTTCN  
 NNGCNGTGTTTTATANANNTNTNAGTGTCTTTTTNTTCTCNATTGNTTTCATTTCATGCGTTANGCTCN  
 50 NNTNNNTNGCNNTTANTCTCNGNGNNCTCNTGCNNTNTNNTTTCGNCCC  
  
 ACNCNNTNTCANNNTANTAATTTTCTNTTTNTTTNTTTNTTTNTNNNTNNTACTNANANNNTTCT  
 55 TTNCANTCCANGATNTCGTNTNNNTACTCCTNNGNANTNTNNNANGTTTGTCTCNTAATATNTTTNAGN  
 ANAACTGGAGCTCCANCNCGGNGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGNCCTGCAGGCTG  
 CNNTGTTTTATNTNTNTNTNACCGTATANCATCNNTCCAANTTGNNTTNNNGTCTTCNTTTATNC



TCTTCTCNNTTNAATTAGACNNTTTTTTTTNAANTTNAATNTTNTTCTTTTNNCATTNTGTCTNTATNTNT  
TTINGTATANN TGNTNCNAGTNTTTNTTTTNAATNANATNTCTCTTANTTTTTTNCN CNNNCTCCTANT  
TTTATACTNTTNTTGTATNCTANNTTANAAANNTTCGTTTTTGGATNTNTATTCNTTTTTNTTAAATG  
NTTANTNNCTTCNNTTCNTTTACTTCANNTNTTTATNGTNTAANATTANGACTTATATATNTACTANTTT  
5 NTTNANTNGTATTTTCGTNNCTTNNTCNNTTATTTNNTCNCTTGATNATNNNTNGNNTGNCAGTNTTTT  
CNNTTTTNNATNTTATNTTTTNNNTTCTTTAANNTNNNTTTTTTNTATNNNACNTTNGNANTNTATTATT  
TTNATNNNTTNTTNCNTCNTANTNTATNNAGANNTTCCATANTTNTNTCCTTTNAANNTNTTTCNNTCT  
TTCTAATTCNTTNNNAGANTCAANCNATNTTNTTNTCTTNTTNTTNTANTTNCNTCCNTNTTTCTCT  
10 NGAAAAATCCATNATCGTTNNAANTGAAAAANTATNTNTCGTTTNTTCATTNCNCTATNCNTTCTACT  
ACANNNATCTCATTGTTTATTANTTTCCATTNCGATANCGNGNGNNNTGNTTTCNTNTNTATCANNTNN  
CNACTNTNTNGCTAATNTCNANNNNACCGANTNGGGNTCCNTTTNNNNATCNNTTTTCTCTACAGAN  
GGGCTTCCCCGTTTAAACNCCCCCCCCNCCACANAATNTNNGAAAAANCTCTCCCTTCTCCCCCTTN  
TCTCTTCCNTTTCCNNAANNCNATTANATAAANGNTTTTCTTTTAAANAAAAAATNAANGAGGT  
15 NNGCGCGNNNNCCCCCTTCCCAAAAAAATAANTGTAATTTTGGGGGGGGGGGGGGGGGNANGN  
GTTTTGGGTTTNTCTNTCTTTCNTAGTNCNTNTTANAAATTTTNGNGANGCCCCCCCCCCCCCCCCCT  
NCCCCCNCCCCCNCCANCCCCCNCTTTNNANCTTTTTTTTTTCCCCCNTNGAAAAAATAATCCCT  
TCTTTTATGGGGGGGTANNAACANANATTTTNGGTTNGTGTGCCAACNAAGNNNTTTTTTTAGNNG  
GGGGGCCTTTTNAAAAAAATATNGNGNGNGGGGGGCG

20 TNCTTNTNGNNGGACNCGANCNANCNNNCNCCCTNNNTTNAAGNCCCTATAGTGGAGTNCGTATTACA  
GGGGAGGNCGCTCTAGAACTAGCGGACCCCCGGGCTGCCANGNTTGCNNGCCCNAGGCCTGGCNT  
CNTGGCNCCTGGTGTGATACGAACGCCNNNNNNCCCCCTCGGNGANNCTGNCTCCNTGCNCTNAC  
25 CACCTGANTNTCCCTNNCNACCGCCACNCGNGNTNTTTTNTNGNGTNTCCTGTGCGNTTGTNCNC  
GAGAAATAANCNNTNTNTTTGNTCGACNGNGANGNCCNCTCNTTTTCTTGTNTNTNTTGNNTCC  
CCCCTNCCCNCTATTNGTTTTCCNCCNCCCNNTNCCNCTCGNANTTTNTACTGCNTNATTCTGTG  
NGCCNCAANNCTCCCNCTTNNCCGNGNCCNCGNCAANNNTCCTTNCATTNTTNNNNNNCNCC  
CCTCCCGNCCGTGNTTNTTGAANATNTCTGNTGNNNNACNCTTNTTNTATNTTCTTNNANTCGNN  
30 CCCCTCNNGCNNNGACGANCGNNNCCTNNNATNTNTNNGCCNTTGTGTCNCCNCTNCTCGTANGTCN  
GTNGCNGNTNGNNTCCNTNTCNNNNATNCGGNTTNTGCTTGTGNNNGCCCNCCNCACTNANNT  
NNCCTTTNTTNCNGTGTGTCNNNTNCCNTCTNTNTNACNNCCNTCCNNNNCNNGCTCNCNTTTTCT  
CCGNCNTCTNTTNTCCNNNNCCCGNNNGGCCNNGTCNNGTNTNGNCCNCCNCCNCTNCCNTCTNN  
35 NNTTTNNTTACNNTTANNNANNNNNNCCGTTACTNGCTCTGCCNCCNCCCTTTNTNCTCTTCTTCCN  
NCNGCCNCCCGCNCCTGCTNCCNCTCTTAAATNTTTCATCCANCCNCCGNCCTCGNTCTATCT  
TNNCNNTCNANCATNTTNGCTTNNCTGTGTCGNCCTNTCGANCTGTNNTATCCNAGCTATTNNATC  
NTACTATCCNCTNGTCNGGTCTTTTNTTCTCTTCTNTTATCTCGCTNTGCNCTGNNNCANCCNTTN  
NATNTGCGCGCNCNTTGTNNCNTCTTNNCNCGCTCTCTNCTCCTNACTNTNANNCTTCANCNANT  
40 NNCTTCACNCTCTTATANANNTTCNNTCNANNCNTNCTACANTNGNNTCCGGTNNATNNNGAGAGC  
GTCTCCGTATAGNCGCGCNTNANNTNTCNCATCGNTCG

45 TNNANCNANATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAG  
GCCCCGGATCTGTCTCTTGCTTCAACAGTGCTTGGACGGAACAGACCCAGGGACGCCCTTGTTCAA  
GCTCNANCNACCTTCAANCTTTTTTTCNANCCNAANCNTTGGANNCNANCNNTNACTNGNCGNGAAC  
ANCCGGGANCNACCNNCTTTTTTAACTTANTANTANCNNCAATNATNAACNNCCAAAAATNNNC  
ANAATTANTCTACCNANGGGGANGNCGNCGNACCGGCTGGGTAAACATGNNACTGGGGGCCTTCTA  
CACCTANCTTTCTCTGGGCTTCTATTTTCGACCGCGACGANGTGGGCTGNGAGGGTGTGGGGCACTTT  
50 TTTTCGGAATTGGCCANGGAGAAACGCCGAGGGGCGCGGAGCGTNTCTTTGAACTGCGAAANCAN  
CGTGGGGGGCGCGCCTCTTCTGNGCGTGCNCAAAACNTNTCNAAAAANAGAGGGGGNGAAACCAG  
ACGCTNTGGAGGGCGCNCNTTNTCGTAANAGAAANAAACNTNATAAACCTGTGGATNTGCATGGGCT  
GGNTTNTGCCCGGAGAACCCACATATGTGACTTCTGAGNAAACACCTTCTATATGANGGAGGGGA  
NACTCTTCATNAAAAANGGGNGGACATCTTGNNAACCCCTCNGCANGGTTGGGTGGTGCCCCAAGNT  
GGGGGTGGGGGAAGAATTTTTTNNNAAANGGGTCNCCCTCANCCCCAACTAAGGAAGCNTTTTGG  
55 GGGAACCACNNGGGCCTTTAGNAAACCCCCCTTAAAAATAAGGGGGGNGGCTTGAAAAACCCCT  
CTTTTGTAGGNTACTTAAAGGGAGGNTTTTTTTTTTAAAAAACCTNNGGGGGCCNCTTTTTTAAACCCCTT  
GGGGCCATTNTGGGGAAAAAANTAANAAGNTT

[illegible]

TNNANCNANATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GCGCGCGGATCTGTCTCTTGTCTCAACAGTGCTTGGACGGAACAGACCCAGGGACGCCCCCTTGTTCAA  
 GCTCNANCNACCTTCAANCTTTTTTCNANCCNAANCNTTGGANNCNANCNNTNNACTNGNCGNGAAC  
 5 ANCCGGGANCNACCNNCNTTTTTTAACTTCNTANTANTANCNNNCAATNATNAACNNCCAAAATNNNC  
 ANAATTANTCTACCNANGGGGANGNCNGCNGCNACC GGCTGGGTAACATGNNACTGGGGGCCTTCTA  
 CACCTANCTTTCTCTGGGCTTCTATTTGACCGCGACGANGTGGGCCTGNGAGGGTGTGGGGCACTTTT  
 TTTCGCGAATTGGCCANGGAGAAACGCCGAGGGGCGCCGAGCGTNTCTTTGAAACTGCGAAANCAN  
 CGTGGGGGGCGCGCCCTCTTTCTGNGCGTGCNCAAACCNTNTCNAAAANAGAGGGGNGAAACCACG  
 10 ACGCTNTGGAGGGCGCNCCTTNTCGTAANAGAANA AAACTNNATAAACCCCTGTTGGATNTGCATGGGCT  
 GGNNTNTGCCCGGAGAACCCACATATGTGACTTTCTNGAGNAACACCTTCTATATGANGGAGGGGA  
 NACTCTTCATNAAAAANGGGNGGACATCTTGNNCAAACCTCNGCANGGTGGGTGGTGCCCCAAGNT  
 GGGGGTGGGGGGAAGAATTTTTTNNNAAANGGGTCNCCCTCANCCCCAACTAAGGAAGCNTTTTGG  
 GGAACCA CNNGGGCCNTTTTAGNAAACCCCCCTAAAAATAAGGGGGGNGGCTTGGAAAACCCCT  
 15 CTTTTGTAGGNTACTTAAGGGAGGNTTTTTTTTTAAAAAACCTNGGGGGCCCNCTTTTTTAAACCCTTT  
 GGGGCCATTNTGGGGAAAAAANTAANAAGNTT

TNNNAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 20 GAATTCGGCACGAGGCACTAATAAAAATTGTAAACAATGCATTCATCGACCTTCCAGCCCCATCAAAC  
 ATTTTCATCATGATGAAATTTTCGGTTCCTCCTGGGAATCTGCCTAATCCTACAAATCCTCACAGGCCTA  
 TTCNTAGCAATACACTACACATCCGACACAACAACAGCNTTCTCCTCTGTTACCCATATCTGCCGAGAC  
 GTGACCTACGGCTGAAATATTCGATACATACAGCCAACNGAGCTTNNATGGTTTTTATCTGGNTAT  
 25 ATATGCCCGGAGGAACAAGNTTATATTACCGGGTCNTACCCTTTTCTAAAAACATNGAATATTNGAGT  
 NATTCNTTTGNTTACANNNATAAGCCCNNTTAAANGGANTCCNCCTACCNTNAAAGGNCAATANTA  
 NTNTNNNGNACCACAGNCNTTAAACCANCTTTTAAATAANCATTCCATNNCNTNGNACCAAATTAAGCGN  
 AAGGAATTNGNGGGGATTTTAAANAAACAAAGCACCCCTTACCCAATNNTTGGNTTCCATTTAATC  
 CTTCNNTTAATNATCATACCAATGGCCTTAGNCCACTTATTTTTCTTCNCGNAAAANGGTTCCAACAAA  
 30 CCAACAGGAANTTTCTTANAACGTNNANCAAAATCCCNNTCCNCCCTTCTTTTTCCNTTAAGGGCCN  
 TTTTAGGGGNCCCTTTTACNAATTTAAGCCTTAAACCCCNAGGCCCTTTTCCNCCCCCGACCCCTCT  
 TGGGGAACCCCANAACTTACCCCCCAAGCCAATTCATTTAAAAAACCCCCNTTTAAATTAAACCC  
 CGGNGGGGAACCTTTTTTTTTTGGGAAACCCAANTTTTAAAAACAATNCCCCCCCCAACCTTGGGGGG  
 GG

TTGANANNGCTGGACTCCNCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCNC CGGGCTGCAGGA  
 35 NTTNGGCTCNAGGATTTTNNNCTGNTNCCANNCATGCAACTTGAANATGGGNNTCTNNGTTGAACGAT  
 CCACTATGGAAANGGAAAGNGNNGNCANCTGGTGTNTCTTACATGGANGGNGCTCTAGNANATTCCC  
 ACCTGCCTACTGNAGAATNCCNATGNTACAACNTAGATCATA CATGNCGNTANCTANNANANCANCT  
 40 NGCNAGTTGANNATGAATNNANTCNNNNTGGNCANNNACNNAATANGATNTNNTTGNNTTGTATNT  
 AATNTTAAGATTNNACTTANNCTNCNANNTTNCNNNNAGTANNCTNCNTACTTNTNNGGNANCNGCN  
 NTNNTNANTACCNANNTTNTTNGNGTNACTCNAANTNNTGNTNCANTTNTTGNNTANCCNCTNNANTC  
 CTCATCCANCTNTNTGATANNNCNTTTGCCCNATAACNTNTNTCTTTGNNNTTCTTGNCTCNATN  
 45 TNAACNCTTTGATCCNAATNNANNTAACNNANTNCTATNNCNCNANCNCNNAATNTCCCTCTNCTNT  
 ACTGTTTNTNNTNAAATTNATNTNCCNNGNCCNCCNANCCTTTTCNNNTATCTCTTNGTCTNTTCTNA  
 TACNCTTNGCTNNCTTTNCCCTNCTGTCTCCNANTTTCCCTNCTCCATNTCNTTTTTGACCCNTGNNCNTC  
 CCCCNANNTTCNNTCAGNAACNTTCCCTTNNNAANTTTNTTTATCTNCNTTNTNTTCTTACNCCTNT  
 50 NTCNCTTTCTANTTTNTNAGNCNCNCTCCCATNTTNTTTTNNNCTCNANAATNNCCANATNTNTTCC  
 CNTNTTGATNTNTNCCACCNCNTCTNANTNTNNTTCTGNNTCACTNTNNTNNCNCTCTNNTT  
 TTNNTNNTNCTTNCCTACAGTCCTCNCNTNNTTNTTNTCTNCTATCTTATATNTCTNTC  
 ANNTCNCCTGNNNCNCTNTGTNNTNCGCTCTTCTNTCTANNNTAGATAGTGANCTCATCNTCTAATTTT  
 CTNCTTTCCCTCACCT

NAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGTAG  
 55 CTCCTCTTCATCTCCCCAGACCGGCCAGCAGGAACCCCAAAGCCTNCCTGAGTCTGACAGCCAGGAC

GTGGGGCTGAGGGCCGGGAACAGCTTCCCCAGGCAGCTCCTGCCAGGCTGTCCCGTGGATGCTTCAC  
 TTGCCTTTTTCTCCTCTCCCAGAACAGTATTTGGGAGATTTTACTACTTATTAGACTCCTGGTTATTT  
 ATTGCAGATTGGCAAGTGCTTGTGTTGGGGGATGAAGGGTAGGGCTCAGAAAGTGGAATATGGTCTTC  
 CTGACCTTTTCAGGTCTTCAGCATCCTCTTCTCCCTGCCTCTGGGACCTTCTGGTTTTCCAGGAGATCC  
 5 TGGCTGGAAGGGCTCTGAGCTCTGTAATAGAGCTGGGTCTAAGGGGAACTGGTGTGTAAAGACCCTGG  
 CATGGGGCAGAAACACACTGCTTGCCAGCAGCCTGGTCATCCTCTTCCCAGAACTTGTGGCTGGTAG  
 TTCCTCCCAGCTGGATCCCTTCAGAGCCTGAGTCTTGGGCCACAGTCTGGGACCCAGCAGACACTGC  
 CCAGGACCCTGATGCATTCTNTTNTCGCCTGTCCCTNTGCCCTTCCCTTCTGGACCATACTACTTGGAAAT  
 CACTGNAATCTGAATTGCGCTTAATTGGCANGGCCTGGGTCCAGTGCCCCCTNTCCTTGGNCCTTGNAAG  
 10 AAAGGGCAAAAANAGCNCANGGACCCCTTNCAGGNTAANAACCGAGCTTCCCCCAATNGGGAAG  
 GAACCTGCCGGTNGGCAAATTTCCCCCTTGNCCCAACCCCAAAAATTTTAANGGGANGGNCCCCAA  
 NAAACCCNNAAACTNCCCANGGNTTCTTAANTTGGGAACCTNCCCCCNGACNTTTTGGACCTTG  
 TCCNANAAAGGACN

15 TNNNACAAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 AANTNGNCNCGAGGCATGGCTGCAGTCACCATCTACAGTGATTTTGGAGCCCCCAAAAATAAAGNCA  
 GCCACAATTTCCATTTATTNGCGATCAAGTGATGGGACCAGATGCCATGATCTTAGTTTTCTGAATGTT  
 GAGCTTTAAGCCAACTTTTTCACTCTCCACTTTCACTTTCATCAAGAGGCTCTTTAGTTCTTCTCACTT  
 20 TCTGCCATAAGGGTAGTGTCTCATCTGCATATCTGAGGTTATTGATATTTCTCTCGGCAATCTCGATACCA  
 GCTTGTGCTTTCTCCAGCCCAGCATTICTCATGATGTACTCTGCATATAAGTTAAATAAACAGGGTGAC  
 AATAGACAGCCTTGATGTACTCCTTTTCCAATTTGGACCCAGTCTGTTGTTCCATGTCCAGTTCTAACTG  
 TTGCTTCTGACCTGCATATAGGTTTCTCAAGAGGCACATCAGGTGGTCTGGTATCCCATCTCTTTCAG  
 AATTTTCATAAGTTTATTGTGATCCACACAAGTCAAAAGCCTTTGGCATAATCAATAAAGCAAAAAT  
 25 AGATGTTTTCTGGAACCTCTCTTGTCTTTCCAATGGATCCAACGGATGTAATGGTTGAANAACTGAAC  
 GGNTCTATGANGACCTAAAAAGACCTTNTAAAACTAACACCCAAAAAAGAAGGCCCTTTTCGTTATAN  
 GGGACTGGAATGCCAAAAGTAGGAAAGCAAGAAACCCCTGGAGTAACANGCAAANTTNGGCCTTGGG  
 GTNCCNAAAGGAAGCNGGGCCAAAGGCTTACCAAAANTTTGCCAANAAAAACNCCCTGGGNCATAAA  
 CAAACACCCCTTTTCCAAN

30 GCCTATANNAGNNGNATNACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGNAC  
 CATCTANCNNGANTGNNGNTGANCNGNCNNGTNTGAGNAAANTNANNNCNGAGAAGACCNTGGTN  
 GTNGNNTTGCTGCTCATTGACGTTGNAGNCTTGAACGAAGCTNCNTGGCTTGTGCCCCTNACATTAAT  
 35 NNAANGNGNAAAGNNTATNANCAACNACTGCNGTNCATACNANNNNNGCNCANNGAGCTCTNAC  
 CANCAAGNNNNNTNNNGGATNTGCAGAAANNCTNTCNAANNNGCNNNNNGNACTACANANACNNNNN  
 NGNACTTAGANNNAANTGCNGCATNCANTGNAACNANNNGGCNTNATGCNANNNNNTGGANNNGGA  
 ACCNNACANNCGATGGAATNNGANNNTNCNTAGANNCGANAGCCCNNTTGACTANTTGAATAAGGCNN  
 NTGNACCTTTCATAAAGANNGTNGAAAAGCNGATNTACNAGGCCATATCGTGNTGGCTNGAATNGTA  
 40 CANNCTGCTCNTGTTATGATAAACCTATTNCAATACTAAATAACCTAATTCNTGCTGCTCATACATNTA  
 ANATGCTGCTTTATACTTTGNCCANGCTGACCCNTTCNTGAATATCCATNCANNNTTAGGGNCATGC  
 CNTNAAATCTTNTTNTCCTTGNCCAGAAGGCGNTACCANATNTNNCAATANAATTTAGCATGGACTA  
 GGAGGCCCTGAATNACCCANGGACATTACGNNGGANNTTGTAAATNCCATAATNGAANCNACTNCCN  
 NGTGNAACNATGANCNCTNCCGANCCNTANGNTGGTTNNTNGCCNTAGCNNAATTTNCNATNCNAA  
 45 ATTTGGNCCNNTTNAAGGNCTTTTGTCTCTAATCTNNTNAAACANTTCCCNTTTCANACNANTTTNNA  
 NTNATANTTTCNTNGCCNTTTAANTCNCCANNNTTTNCGGGANNNNCTAAATNNTCCTANTGTAA  
 GNCCCTTTTNTTNGGGCCC

50 GCCTACNGGAGCTNCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGGCAGGGTTT  
 TTTTTTTTTTTTTTTTAAAGTTTTTAAACCTTTTTTANGGGGANCCNGNCTTTTTNAAAAANCCCCC  
 CCAAANCCCCCANGNANCNTAANNNTTCCNTTTTTNCCCCCNAANGAAGGGCANAANCNTTNA  
 AAANTTGGGNGNAANCCCAAAAANTTTTTNAAAGGGCCNANANTTTTTTTTTNTNAAANGAAAN  
 NCCCCCNAAAGGGNCNTTTTTTCCCCCCCCCNCNNCNGNNAANTTTTTTNGNAAAGNCCCCC  
 55 TTTTAACCAANCAACNAAANTNCNNGANNNGGNCNGNAANNCCNANNGGGGGGGTAACCCNNG  
 GNACCGGCCNAGNATTNAAAAAANTTTTTTAAACTTTTGNAAACNTTTTTTTTTNTTTTTTAAGAANNNG

GTTCCNCNNTCNGGCCCTTNNCCCNNTTAAAAANTNCCAAAAANAAAAAGGCGGNNANTNGGGTNT  
TNNACCCAAAAANCTNNTTTTGAAAAAAAAGGCNTNNCCAAAAATTTTNNCCAAACNTTGNAAAAAT  
NTGGNAAGGGGNTNTTTTTTTTTTNAAAAAAAAACCTTTNTTTGGGGGGGGNCCCTCCCGAATTTNTN  
NGGGGGTGNGTTTTCNGCCCCNANNAANAAAAACCCCCCNGGNGGAATTTCCNCCGGAGNAAACAN  
5 AAAAAAGGGGGNNTTTTTTTNAAAACNNGGGGGGGGGGCNCCCTCCAAAAAAAANGGGGGGGG  
GGNGGGGGGNGAAANNTTGGGNCCCTTTTNCNGGNNNAANTTTTTNTTTTNCNCGANNGGCN  
CNCCCCNGGNNGGNTTTTNGGAATTTTTTCCCTTAAAAAANNCCNGGGGGGGGCACNNCCTTNC  
ACNNNNCCCNGGGNTTTTCCCCCGCCCCCNAAANNACGGGGNGGGC

10 NGTNNCNTAGGGNNANGNNTNCCTCNTCCNCTCCCNNTCTTNAGNCCCTATAGTGGAGTGCGTATTA  
CAANGGNGGACGCTCTAGCNNCTAGNGGCATCCCCCGGGCCNGCAGGCNATCCTNCTCTAGGTNNC  
NNTTNNNTNGACTCGGGTNTTNCANCGCCTTNTCTTNTNCCCCGCGGATGANNACTGNNT  
CCCATCTGNNTANTACCNCANGNNTTNCGCCTTACNTGGNCAGNCCNCNGGCCCNCGATCGNNTGA  
15 NACAAGTGNGCTCTNNTGGTTGCNGGACNANCACTGCNTNNNANTTNCNCTGNCACNCGCTNAN  
ACNNTNANANNGANTTTGCTGGNACANGCANTGNCCGTATNNCNTNTTGCNNGGGCCAGTANNAG  
NANTGGANACNNNNTTNCNCCGNAGCTTGNTANGCCCAANTTCTTNTNCTACCAGGGAGCNNANA  
ANGNGGCCTCTTNTGNTANNCAAGGNGNNTGNATNNTGGGNCNCCGNCNCCNNGTCCCGATGNGG  
CACCTNCTNTNTATTANGGTATNTGACNCCNCCCTGGGCGAACTTCTGAATCTNNNNNNGNAGNN  
20 TCCTNGGGACGCCNTAANANTNTANNCCCCCNNTNNTAGNAGAGGNGNTNCCNANNACCNGCCT  
NANGGGCNGANCNCGNNNGNANNNNANNCNCGTNNNCCATNTCNCGCCATTNGTCTNGNNAANGCTT  
ACTCNCANNNNACCTCGNCTGTCTTNNCTNCCNTGNGCCNNGGNGNNGATCGCTNACNNGNCCNCC  
GGCAAGCCCGCNGNNNNNNGNNTNTAANTNCCCTGNTGCCNNTNNTNNGNTTNCNNTATGTC  
NACNNCCATTNNNTCCNNCAGNNGCNCNCCNNGTTTGTCCCTTCCCTTATGTGTCCCTCTTCTT  
25 GCCCCCNCCNTCGCAATNGGANCNNTTGGCCNNTGNNTATCANNTNCTCANTNNGGNANCCATACC  
CACNGANCACNTAGAANNGTATATCTCANCNCNGNGCATTANTTNNNTANCTTNTCNTNNGANTTN  
TCTACTNCGCTCTCATNNNTGCCNTCNCNTATNTCATTAGNNCANAANCAANTGNTGANTNCNNTC  
NNNTNCCNCTCATANNNNNNCANTNCACTCTCNGNCCACANNNGCNAAGCGCTGTNNNCNCTGC  
GNANNCANNTNTNTNCTGANCANTGANANGANTTATNNACTGTTGTGTCTATCTNAGNGCGNN  
30 NCGCNCACANGGGCTGNNACNNACATANANANNTCNGCTCATNCGATGGNGNNGCCCTANCGANTG  
NNNANGCNCGCG

35 AACAAAACTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGTT  
NAGNGTCCTCTTCAGCGACTCAGTACGGGGCTCATGAGCAGACACATGCGATGTATGTTTCNACTGGT  
TCCTTNGTTAANAANNANNCNNNCCTNANGGCNACCTTGANCCNNNNNTTCANANTCTTAANCNTTA  
ANTNNCCCCANCGGANNNAANNAANNCNNNATGGGGGGAACCATTTCTNNGGCCAANNCTNGTNAA  
CANCATTAAACANCANGGCGGTAAAGNTTTTCATTTGGGCANNCCACANNANCANNCTGGCATTTAACA  
TGNNGGGGTTGGCCAANCCACCTTTATNAACCTGGCTTAATANACACAGTCTACAGAAATATTTTC  
40 CCAACAGNACANNACAGACACGTGTTTACAATATCATACTNTTTCATGTGTAAGANCGGGGNTNCACNN  
AATNTACACCACATNGGGCATGTGCNTCNGAACAANCCACCCCAACAANNNNNTGTGAAGGGNGT  
CTGGGGGAAACCNAAGGGGAAAATCCTCTTCTTTATGGGTNTACAACCTGGGAGCACANAAAACT  
AGAAATTCNTTTTTTGTGTTGNAAAAANATATNTGGATNNNTTGTACAACCCATAANAAGNNTGACAA  
CTGACTTGTGCGNGGAAGAAAATTTGGACCNCCTAGAAAGGCCTTTTTTGAAAATGTGGGNNNGTGC  
45 ATAATAACAAAATGATGGTTGTCCAAAAACCCCAAGGAACCCCAACNTTTGTGGTGGNAAANTGG  
GAGATTTTTTTTTTTTATTGACCCCTTGAAAGGGNTTGANAAAACAAAATCATTTTTNTNAAAAAAA  
AGTANCCANNAGGGGGTTTTTGGTTGGTTTTTACCGCCTNAAAAAAAATTCNNGGG  
GGGGGGNN

50 AACAAAACTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGTT  
NAGNGTCCTCTTCAGCGACTCAGTACGGGGCTCATGAGCAGACACATGCGATGTATGTTTCNACTGGT  
TCCTTNGTTAANAANNANNCNNNCCTNANGGCNACCTTGANCCNNNNNTTCANANTCTTAANCNTTA  
ANTNNCCCCANCGGANNNAANNAANNCNNNATGGGGGGAACCATTTCTNNGGCCAANNCTNGTNAA  
55 CANCATTAAACANCANGGCGGTAAAGNTTTTCATTTGGGCANNCCACANNANCANNCTGGCATTTAACA  
TGNNGGGGTTGGCCAANCCACCTTTATNAACCTGGCTTAATANACACAGTCTACAGAAATATTTTC

CCAACAGNACANN CAGACACGTGTTTACAATATCATACTNTTCATGTGTAAAGANCGGGGNTNCACNN  
AATNTACACCATNNGGCATGTGCNTCNGAACAAANCCCAACCCCAACAANNNNNTGTGAAGGGNGT  
CTGGGGGAAACCNAAAGGGGAAAAATCCTCTTCCTTTATGGGTNTACAACCTGGGAGCACANAAAACT  
AGAAATTCCTNTTTTTGTTTGNAAAAANATATNTGGATNNNTTGTACAACCCATAANAAGNNTGACAA  
5 CTGACTTGTCCGNGGAAGAAAAATTTGGACNCCGTAGAAGGCCTTTTTTGAAAATTGTGGGNGNGTGC  
ATAATAACAAAATGATGGTTGTCCAAAAACCCCAAGGAACCCCAACNTTGTGGGTGGNAAANTGG  
GAGATTTTTTTTTTTTATTGACCCCTTGAAAGGGNTTGANAAAAACAAAATCATTTTTNTNAAAAAAA  
AGTANCCANNAGGGGGTTTTGGTTGGTTTTACCGCCTNNAAAAAAAAAAAAAAAAAATTCNNGG  
GGGGGGNN

TTNAAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAAGTAGTGGATCCCCCGGGCTGCAGGT  
TACACCCCAACCCCAACATAAGGACAAGTCAGTTTGTCTAGTAGCTTCCTCTGGCTTGAACCCCTCGA  
TTTTTATAGCCCACTTAACCATGCATAACAGACAAGTCCCATATTTGTCTAGTAGATGCCTTTTTTTTTT  
15 TNCCCCCNNGGNTTAANCCTTAAGGGCCNAANCNNAAAAAANNCNNANCGGTTTANAAAAANC  
NACTTAGGGCCTTGAATNNAACCTTGGCCTTGGNAANANATTACCTTTTINAGGNCCAAAGGGCCCCC  
GGGNCCNCCCNAAACCTTTGCCCGGGGNGGGGNGGGGGGGGGGGGCATTAAAAANANNANNT  
CCNTCCATNGGAAAAAAATNGCNCCTTTTNTTAATTTAAATTTCCAAAAANTTTNCTTTTTNCCTTTC  
CGGGGGAGCCCCCAACCCCTTTGGGAANGTNTTNCCAAATTTGGTTTTTTNNGGGGAAACCTGNTTT  
20 GAAATTNAAAAACNTTTTTTTTTTCCCAACCTGAAACCTTTGGGGGAAAAAATTTTGCCNGGGTTNNGG  
NANGGNCNNNAAAAAGGAAAAATGGNAAAACGGGGGANAAAAATTGGGNAAAANAAAGGGGGAAC  
TTTGGGAAAAAAATTTTTTTTTTTTTTAAAGGGGGGGGGGAAGGGGGAACCTTAAANGGGNTTTTA  
AAAAAAATTTTGTTTTTTGGGGGGNNAANNNCCCCCCTTNTTNTTGGGGGAATTTTTTNAAAAAAN  
NCCCCCCCCAANNNGGGGGGAAAAGGTTTTNAAAAAATACTTTTTNNGGGGGGGGGGAACNN  
25 NAAAAAGGGGGTTTTTTTTTNCCAAAAAATACTTTTTNNGGGGNAAAAAAATTTTTTGGNAAAAA  
AANNTTTTAANGGGGGTTTTTNGCCNAAAAAAACCGGGGGGNT

TTGANACAGCTGGACTCCCCGCGGTGGCGGCCGCTCTAGAAGTAGTGGATCCCCCGGGCTGCAGGGCA  
CCCCGTGCTGCTGACGAGGGCCCTCTGAACCCCAAGGCCAACCGTGAGAAGATGACCCAGATCATGT  
TCGAGACGTTCAACACTCCTGCCATGTATGTGGCCATCCAGGCTGTGCTGTCTCTGTACGCCTCTGGCC  
GCACCACTGGCATTGTCTGACTCTGGGGACGGGGTACCCACACGGTGCCCATCTACGAGGGGTAC  
GCCCTCCCCACGCCATCCTGCGTCTGGACCTGGCTGGCCGGGACCTGACAGACTACCTCATGAAGAT  
CCTCACGGAACGTGGTTACAGCTTTACCACCACAGCCGAGCGGGAAATTGTGCGTGACATCAAGGAGA  
35 AGCTCTGCTACGTCGCCCTGGACTTCGAGCAGGAGATGGCTACCGCTGCATCCTCCTCCTTGGAGA  
ANACTATGAGCTGCCCGATGGTCANGTGATCACCATTGGCAATGAGCGGTTCCGGTGTCCCGANGCAC  
TCTTTCAGCCGTCCTTCTGGGTATGGAGTCCTGGNGCATNCATGAAANCACCTTCAACTTCATCATGA  
AGTGNGACGTGGACATCCGAAAGGACCTGTATGCCACACGGNGCTTGTNGNGGGGAACACCATTGTA  
CCCTGGCTTCNTTGACAGGATCAAAAGGAAATACCGGGGCTGGGTCCAAGCCCGATGAAANATCAA  
40 GAATCTTTGGTTCTTCCCGAACGCCAAGTACCTCGGGGGGGGATCGGGANGGTTCCATTCTTGGCCTTC  
CCTGGNCCNCCTTTCAAAAANAAGGNGGGTTCAACCCANCCCGGAANTTTGACCAAGTNTTGGGCCCC  
CTCCTTTTGGCCCCCCCCGAAAANGCCTTTTTTAAAGGGACTNGGGAAACCAANAGCCTTTANANTTT

AAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAAGTAGTGGATCCCCCGGGCTGCAGGAATT  
CGGCACGAGGCAGCCTTGTAACCTTCATCACAACGAGATCCAGGAAGTGGGCAGTTCTATGAAAGGCCT  
CCGATCATTGATCTTGCTGGACCTGAGCTACAACACCTTAGGAAGGTACCTGATGGACTGCCCTCAG  
CCCTTGAGCAGCTGTACCTGGAGCACAACAACGTCTTCTCAGTCCCCGACAGCTACTTCCGGGGGTCA  
CCCAAGCTGCTGTATGTGCGGCTATCCCACAACAGCCTCACCAACAATGGCCTGGCCTCAAATACCTT  
50 CAATTCCAGCAGCCTCCTTGAGCTGACCTCTCCTACAACAGCTGCAGAAGATCCCCCAGTCAGCAC  
CAACCTGGAGAACCTCTACCTCCAAGGCAATAGGATCAATGAGTTCTCCATCAGCAGCTTCTGCACCG  
GGGTGGATGTCATGAACTTCTCCAAGCTGCAGGTGCTGCGCCTGGATGGCAACGAGATCAAGCGCAGC  
GCCATGCCCGNTGACGCGCCCTNTGCCTGCGCCTGGCTAGCCTCATCGAGATCTGAGCGCCACTGGG  
CGCANGGCCATGCCCCACGCCTNTTTGCATTTTGGCTTGATGGTTGGGTTTGGCTTTTGAATGGAAGG  
55 TCTGGGAACAANACCGTGTGACAAAAGGTCCATNGGGCTCTNTTTTTTAAACCTTNTTNCCTGGAGGGC  
AGTTTTAGGGGGGGNCANGGGGAAAGGCCCTTTTTTGTGGGGGGGAAAATGAANCCCTTCCGTTT





TCGNGNTAGGGGNGGATNGCNCNNATNGCCTCTNTTACCCANTCGNAGNCNTAATNNGGAGNCTNCA  
CCNCAGTGGCAGGCACGCTGCTNGNANCNAGTGNGTNCTCAAANCGGTCATGCNCTAAATGNCCGCT  
CGAGGCCATTTTTNTCTNTNACNTNGGCGNTATNCTGNTCCGGNGCNGNNGAGGCCNCNACCTGN  
5 AGAAGCANCGTNNTTGNTCTNATCAGAACTTTNANTANNCCGGCTGTNCTGNACNANNTTAACTNG  
CNGTGNTACTGCNANTNTNNGGCATTTNTNGANTCGTCNCANNCTAAGGTATAGAANGNCGGNGTCGT  
ATTANTGTCNTTGTAAATGGACNAAGTNNCGNCNNAGGGANTACNCGGCTTTANGGGCNGGTTGGAN  
NCTNAANCCTTNGNTNNANTGNTTNGGNCNCNATCCNNTGTATNNGNNTCCNNTAGTNTNCNTCNNNN  
GNTTCTTGNNAAANTGNGNCNATCTACTNAGTNCGGCCNGGGNGGATANCTNTNTNANCTGTTTACGC  
10 TCTNNGACNCCGNNNNNTGTCAAAGTTTGGANTGCCTNNTACTCCCANNCANGATGNGCGNNTNNAC  
CNCCCAANTNTNNGTAGGNACCCANCCNNGAGCACTNTNTNTNCTTAANNNTCAACNCGCNCNTNG  
NNCAGGGTNTTNNNNANANGNTGGGNNNCCNNACNTNACAGTGGATNCTNACATCTGTCNCCACTNC  
TTGANNNTGNNCNTTTGTNCCGGGNAGNTTACNCNTGNGGGGNTNAAAGGNATNTTNCNTACCACN  
TGNNNTCTGGANTGGCGCNCNTTACAAATCTGNNAGTNNCGCTTGNGGNNACCNCAGGGGNAAN  
TTNNNNNGNTTGNGNNTNANTNGGNAANGCNCNTTNCNATNTNCCCCCGNATACCCNNTTTACTNT  
15 TTCNTTTTACTTATAANTTTNTACTNCTATGANNTTCAACNNGNCTAGCAATNANAATAGNGCNTAN  
NTNTCAGGNGCNACCNGCCNNTGGGTGANTCTNTCANNATATCGCTANNANTATATNTCNGCANAN  
NCTTCTNGCGGAAACNTATCGGCGCGNNTNANNNNTGTATCTNCNTNNNCANATAACTCTNAGTTGCN  
GTGCNGNGTNTTGTANNCTANATNNNCNGTGTAAATNNCNGCNCANTCCNNTGGTNCCTANGGTCT  
TNGAGTACAACTANTGCNNCNGTTNGCTTGGACGTTCTCNCNTANNNCTGTAGNANAANNTCGCAGN  
20 TANTNNTNANACNNGTATAGANAATTACTCNCATTATCGNNTNANNNATNGANATTNGTNGTNCGTC  
TNNNTANATTGANGANTNTTGCANGNTTNTNTNATANATAGACGATAGNGTNANGAGTCN

NCAAAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAA  
25 NTTCGGCACGAGGCCTGGAGCATGAAGCCCGGAACTGCATGAACCGCTCAAAACAGGTCTTCACGTGC  
TCTGTGTGCCAGGAAACGTTCCGCCGNAGGATGGANNTGCGGNGCNCNTGGNGTCCNANNCGGGGN  
AAANNCCTTACAAGNNNTCNTGTTCNANNANTTANTNCAAAAAANGGACNNGCAAANCCNNNT  
NATNAACTTGNNCGNACCCCCNANCCCCATNNCTNGNCCAACNNGNNCNANNGNNTTCTNGTCCNGA  
NCGNACTTGNACTNGCCAAGGGTTNAANCACNTGNGGGAGAAATGTTTGTGTGCCAAGAGATGCGC  
30 GGCACACNGCATCTAGCCCCGNATGTGGNTTGNATATGCATCTCAGGGCCAGCACACAGAGACGAG  
AGNGGCATANACTGTGTGAGANTTTTNGANACNCNCTTTCACANAAAGGGCNTATCTAAATGTGCTGT  
TGCACACGCACANGGGAGAAAAANCTTTNACNNGNCCNNTTNTGGGAAAAGATTTTGCACCAANANAG  
AGTTGTGGAAAAACACACGCGCCCNACNNGCGAGAAGACCTTTTTTCATGTGAGATTTGTGAGAACGC  
TTTTCANAAAAAGNGGGCCTTCTTCATGAAATGTTGTCCANCNCCCCCNCAACAAGGNGGNGCCCCC  
35 NCTTNTTTTAGNANAATGTTGGGAAGAACTTTTTANATTGGTGGAGGAACTTCTTCNTCCNCTNAA  
NGAAANAAAAACAACGGGGGGGGANGNAAGGAACNNCNGGCCCCNCAATTGATGGGTTACNAANN  
ANNCCCCCGCCNGGGGCCCCCCTTCCTGGGGGGGGGCGNNGGANGANACATTCCCCCGGGCNGGGG  
GGNAAAAAAAACCNCCNNNNGGGNNAANNNTTNTTTNAATTT

NCAAAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAA  
40 NTTCGGCACGAGGCCTGGAGCATGAAGCCCGGAACTGCATGAACCGCTCAAAACAGGTCTTCACGTGC  
TCTGTGTGCCAGGAAACGTTCCGCCGNAGGATGGANNTGCGGNGCNCNTGGNGTCCNANNCGGGGN  
AAANNCCTTACAAGNNNTCNTGTTCNANNANTTANTNCAAAAAANGGACNNGCAAANCCNNNT  
45 NATNAACTTGNNCGNACCCCCNANCCCCATNNCTNGNCCAACNNGNNCNANNGNNTTCTNGTCCNGA  
NCGNACTTGNACTNGCCAAGGGTTNAANCACNTGNGGGAGAAATGTTTGTGTGCCAAGAGATGCGC  
GGCACACNGCATCTAGCCCCGNATGTGGNTTGNATATGCATCTCAGGGCCAGCACACAGAGACGAG  
AGNGGCATANACTGTGTGAGANTTTTNGANACNCNCTTTCACANAAAGGGCNTATCTAAATGTGCTGT  
TGCACACGCACANGGGAGAAAAANCTTTNACNNGNCCNNTTNTGGGAAAAGATTTTGCACCAANANAG  
50 AGTTGTGGAAAAACACACGCGCCCNACNNGCGAGAAGACCTTTTTTCATGTGAGATTTGTGAGAACGC  
TTTTCANAAAAAGNGGGCCTTCTTCATGAAATGTTGTCCANCNCCCCCNCAACAAGGNGGNGCCCCC  
NCTTNTTTTAGNANAATGTTGGGAAGAACTTTTTANATTGGTGGAGGAACTTCTTCNTCCNCTNAA  
NGAAANAAAAACAACGGGGGGGGANGNAAGGAACNNCNGGCCCCNCAATTGATGGGTTACNAANN  
ANNCCCCCGCCNGGGGCCCCCCTTCCTGGGGGGGGGCGNNGGANGANACATTCCCCCGGGCNGGGG  
55 GGNAAAAAAAACCNCCNNNNGGGNNAANNNTTNTTTNAATTT



GATGGTCAGTAGGACAGAGGGTAACATCGATGACTCGCTCATTGGTGGAATGCCTCCGCTGAAGGCC  
CCGAGGGCGAAGGTACCGAAAGCACAGTAATCACTGGTGTGATATTGTCATGAACCATCACTTGCAG  
GAAACCAGCTTCACAAAAGAANCCTACAAGAAGTACATCAAAGATTACNTGAAGTCAATCAAAGGGA  
AACTTGAAGAACAGAGACCAGAAAGAGTAAAACCTTTTATGACAGGGGCTGCAGAACAAATCAAGCA  
5 CATCCTTGCTAATTTCAAAAACTATCAGTTCTTTATTGGTGAACATGAATCCANATGGCATGGNTGC  
TCTTGCTTGGACTACCGNGAGGATGGGGTAACCCCATATATGAATTTTNTTTAAGGATGGTTAAAAAA  
TGGGAAAAATGTTAACCAAAGTTGGCAGTTACTTTTGGATCAATCACCTGTCGGCATAACTGGGCTGG  
GTTACTGGTTTTNATTTCCCCCAACACCCNNGGACTTAAAAACAGANGGGAAGTGGATGNCANTNTNCA  
AGCCTNTTTANTTTGNTTTTGAACGTTGAATTTATTTTGGGAGCGGGGNGGCNTTTGGTTTTTTGANA  
10 AAAAAACGGGGTTCATNGGANGGTTGGGCTTAAAAAATAAAACCCCTT

CCTATCTGGAGCTNCANCNCAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTC  
15 NGCACNAGGTGTANNCCNGGCCNCCNTTCAGCNCATGTGCCNCCGNNANTGGNCATCTCCTGACTCCA  
TGATTGCATGCTGGCTATTACATGNNCCCTGTGAGGNAGTCACNACCTCTNACACNGCTAACAGACTN  
GANGATGAGGCCNTNNGCCCACTTTACCTGANNTTGTGNTCNGNCNTNANGTAGNAACCACATGCCCA  
ATGNNTCATAGCCCTGGCTANNAGAACANGNACGACCTGNGCCAANANAGGACCTTTNCTNACGTGA  
TNTNAGGAGGGCAGGGNTTCGANACTTTCTATATNNTATAGCACTTGTNNGTGCTCTGCTCACCTN  
20 ACNGAATATNAAAANTNNATCNGTGNGAGNGAAAGTCNGCTCGNATNGNATTCTNTTGATTGATCANG  
TNATTTGGGCTNCATCCCTTGNAANTAANGAGCTGTGCTATCNTTGTNCNACTGTNTTACANACNNA  
ATANCNATCTGTTNNCCGGNATGCCNGCATTATTTTGAATNAAANCTNTNNTTNNCANNTNGNTGG  
ATCCNGACTNCNNGCGNCCGAACCNNTTGNANTNGCTNTAATGCGGGANTGTNNAGCCAAAAANT  
NCGGGNTTINANTCNTCTTTATTTCTTNNACCGCTTNGGANCTNGTTGCCTCTATGGCTNTTTGNNNTGN  
25 CAACNNCAACNACATNACCTNTTTTNTTACNTNTCCGNGACNCCTTTNNNNAGATTNACCCTNGTNTCT  
CNGNNAANNNTAATTTTCATNCNAAATTTNTTCCCTTTGAAGCCNTTNTTTGCAACCCCTTTGGNANGG  
CNNTTNGNTTNCNCCNNGAATAATGGNANGTCNNTCNGGACCCCCAAAAATACTAAAAAANTGGTGTG  
NACTGTTTCTATCTAACTNNTACAGNATCCCTTTTGGAGANGCGNNNACCGGCAANNNGNTCNCNC  
TTTTATGAACNNTGGATTNTTTTGGCNTTANTGGCT  
30

NCCTATNNGGAGNNNNATNNCAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTTGCAGGAA  
TTTCGGNNCGAGGGCCGGGCTCTCAGAAACATCACATATCACTNGCAAGAATAGCATTGCATACATG  
35 GATCATGCCAGNNGNANTGTAAANAANGCCTTGAANCTGANGGGGTCAAANGAAGGTGAATTCAAGG  
NTGANGGAANTANCAAATTCCCNTNCCAGTTNTGGAGGATGGTNGCCCAAAACACACTGGGGAANG  
GGGCAAAACAGNNTTCCAGTATCAAACNCCCAAGGCCGTCAAACCTACCTATTGNAAATATTGCNCCCT  
ATGATATCGGGGGCTGANCAAAAAATTNGGGGNGNACNTTGCCTNTTTGNTTTTATAANCCAAACT  
NTATCCAAAGTCCCANAAAAAGCTTCACACNCCATATGNCCTTNTGCTCNAATCNTGGCCCCAGNAC  
AAGTGACCAAGTNCCAGTTNTTTTTTCCCTGANATCGAGGGTCTCAAAGGCCAAGAGGGCTTCCCTGG  
40 NGGCTGNCATCTGNTGACTCTGAACAGNGTGGAGAGATGGCTGTAAAGATCTCACGCCANNCTGGCC  
CCNTCTGGACGCCTNTCTGAAGAACCCCCACANGACATGGCGCGGTTCTGCGCGAANACCANGNCTTA  
TGAATGTCCCGCNCNCCNCGNCGTGAANGANCCCCCCCCACAAGAAANCTGTTGGANNGCGAAAAAN  
CCCTGNTGTNTTTTNNNATCCCCAAAATTNNTTTTTCCCCCANAACCNCCGGTNGCNTNNGGGGGGG  
NGGATTNTCTTCTCCTAAANNNNCCCTTGNTTTAAANACNANNCCNNGGCCCGGTTTTTTTNNNCC  
45 GANCNAANNNCCANGGGTTTGGGGTNNNAAAAAATAAACCNNCCNNGGGGGNNGCTNNGGG  
NCCATTCTTTTTTNNNCCNNNNAAAAAGAAAGGNTCCNCCT

GCCCTANCTGGAGCTNACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGTC  
50 AACATGACTGACAATGATCTTATCAATATTCTTGACCCTTTTTATCATCTTTCAACTAAAAGTTTCAA  
ACACAACCTTTTATCACAATCCAGAACTGACACCAACAAAAATATTAACNAAACNCCCTTGGGAAA  
CAAAATGAACGAAAATTTATTTACCTCTTTTATTACCCCTGNAATTTTAGGNCTCCCTNTCGTAACCT  
TATCGNACTATTCCCAAGCCTACTATTCCCAACATCAAACCGACTAGTAAGCAATCGCTTTGNAACCT  
CCAACAATGAATACTTCAACTGGATCAAAACAAATAATGAGTATCCACAATTCTAAAGGACAAACAT  
55 GAACATTAATATTAATATCTCTGATCCTATTTATTGGATCAACAAACCTACTAGGCCTATTACCCCAT  
CATTCACACCAACAACAACTATCAATAAACCTAGGCATAGCCATCCCCCTGTGAGCAGGAGCCGTA

ATTACAGGATTCCGCAATAAACTAAAGCATCACTTGCCCATTTCTTACCACAAGGAACACCCACTCC  
ACTAATCCCAATACTAGTAATTATTGAACTATCAGCCTTTTTATTCAACCTATAGCCCTCGCCGTGCG  
GNGGAACAGCTANCATCACTGCAGGACACCTATTAAATTCACCTAATCGGGAGGAGCTACACTTGCCT  
AATAAGCCATTAGCACTACAACCAGCTCTTAATTACATTACCAATTCTAATCCTACTAACCAATTCTAG  
5 AGGTTGCAGTAGCTTATAATTCGAAGGCCTATGGATTACCTCTTCTAAGTCAGGNCCTATTNTCTTGC  
TTGGACAACCCCTTTNNNNNAAANNNNNNNNNNNGNNNGC

NNNTATNTGGAGCTNCACCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGNNC  
10 NNATGACNATCNTGNTGTTNTNATNGTCTGANGCNNNTCCGGGGTGNNNNNNNTTTNTNTTACTTACN  
NGTANCCNGNCCCCCNCNGTGNNGGGTGGCCTNNCCANAAATNGCCNATTTTTNTTNGGGNCCN  
NAAAGGGNCANNNGGNATAAANGCCANNTNNNTGNCANCTTGGNAAAAACAAGGTNNACCTTTNN  
NCCTTGAANGCCTGGAANCCNGNNCCTTTTCCNNCCNCNNGGACNTTGNCAAAANNTGGNGAANACN  
NGGNTNTTAAATNGNAATGNACTGCNCCCCNTTNANNGTTAAAGGGNNGACNTAATTNTNNGTTGT  
15 GTCTCNACTTTATACACNCCNCATTTATAGGCCGGGGCNCNTNCACAAAACCCCGGNGACAGGGNGN  
GAGGGCCNCANATNNCCCGNGCNANANTCACACTCCCCCTTTGNATNNATGGGCANATGNTGTGT  
TTCCTNTCCNNGTGCGCNAGTGCATGTGCNCNCNTCTNTATATACCNTGGCTCNANNAGGTGGCNNTA  
TNANAATTTATNACCGTTTTTGNATNNGACAATGTNGCAGNAANNTACTGCTGNTTATCAGACTGCTT  
GTGGGGGCNNCAANAATCATNTTACTCTNGNGACCCCCCGANGAACAGGGGGGGGGCCCCCTTCTCTTT  
20 NATTNTCTTNGGGAGGGCNCCTTTNTTNTTTAANCCNCCCCCTTCATTNNNANNAANTTNGNGNC  
NNTAANAAAAAANNGGGNNGGGGGGGGGGGGGGGGGGGGGCCCCCTTCCNTCCCTTTTTTTCC  
CNANTTTNTTAAATAGNTGGGNNNANAAGAANTTTCTNTNGAANAAAAANACCCCNANNGGNGAN  
ANANACNTTTTNTTTTTTC

NNNTATNTGGAGCTNCACCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGNNC  
25 NNATGACNATCNTGNTGTTNTNATNGTCTGANGCNNNTCCGGGGTGNNNNNNNTTTNTNTTACTTACN  
NGTANCCNGNCCCCCNCNGTGNNGGGTGGCCTNNCCANAAATNGCCNATTTTTNTTNGGGNCCN  
NAAAGGGNCANNNGGNATAAANGCCANNTNNNTGNCANCTTGGNAAAAACAAGGTNNACCTTTNN  
30 NCCTTGAANGCCTGGAANCCNGNNCCTTTTCCNNCCNCNNGGACNTTGNCAAAANNTGGNGAANACN  
NGGNTNTTAAATNGNAATGNACTGCNCCCCNTTNANNGTTAAAGGGNNGACNTAATTNTNNGTTGT  
GTCTCNACTTTATACACNCCNCATTTATAGGCCGGGGCNCNTNCACAAAACCCCGGNGACAGGGNGN  
GAGGGCCNCANATNNCCCGNGCNANANTCACACTCCCCCTTTGNATNNATGGGCANATGNTGTGT  
TTCCTNTCCNNGTGCGCNAGTGCATGTGCNCNCNTCTNTATATACCNTGGCTCNANNAGGTGGCNNTA  
35 TNANAATTTATNACCGTTTTTGNATNNGACAATGTNGCAGNAANNTACTGCTGNTTATCAGACTGCTT  
GTGGGGGCNNCAANAATCATNTTACTCTNGNGACCCCCCGANGAACAGGGGGGGGGCCCCCTTCTCTTT  
NATTNTCTTNGGGAGGGCNCCTTTNTTNTTTAANCCNCCCCCTTCATTNNNANNAANTTNGNGNC  
NNTAANAAAAAANNGGGNNGGGGGGGGGGGGGGGGGGGGGCCCCCTTCCNTCCCTTTTTTTCC  
40 CNANTTTNTTAAATAGNTGGGNNNANAAGAANTTTCTNTNGAANAAAAANACCCCNANNGGNGAN  
ANANACNTTTTNTTTTTTC

TTGAANAACNNTCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
45 GGAATTCGNCACGAGGCNTTANTACAGGNTCGGTCTNCTTGCCATNNTCTTGGGTCTGCNTNANACCC  
ATTAGGTTNANATAGANCACTTACACGNGNNTAACCTATGCCNCCNNATNTTTNACANCNNNNCNTA  
CTTCTNTNGNCCCCGCTNCCGNATAANCTTTTCGGCCTTTTCCCGAGTGGNCAGCACCTTGNANCTTTC  
NNGNCGGCCTGNGCNCNCCGGCCTNANCNTGGATGGAACNACGGTGGGGGGCCCCCTGTTTGGGGGGCA  
TTACAACGTGTTCCGTTAACCCAAAGCCTGGTTGACCCCNNTAAGCTGGANGGGGAATNCCNANATC  
50 CANGGCCGNCNCCCGANGNNAAGGGANCCNATTAATGACCCCTTNANANAANAATTTNNCCTTC  
TTTATTGGANAAAAGGGGCCGGGTNCCCTNGGNNNNCANAAACCAGGNTTTGGGANACCNAANTG  
GAANCCTTTCTTNCANNNNCNANGAAAACTNGGCCCGGAANNAANATTANAANNAATNTTNTTTG  
NNAANNTNNCATTAAACAACCTTTCCNNTTGGGNGNTGGAAAACTTTTGGCCCNCGNAGAAAACNTTA  
AAATTNGNAANTNNNAACTTTGTGAAAAANTNNNTNNGGGNCTTNGGGGGGGACCTTCTANNNANC  
CAANTTTTNGGGGTNNAAATCCCCAAANNCCNCCNANACCNTTGGNAAAAAGGNTTTNTTNANAA  
55 TNAAAAAANGNNNNNNNANAAAACTTCTNNNNAAACCGGGGAAACNTNNNNANNNCCCCCTTN  
NTAAAGGCCTCNCNCCNNNNNNNNNTNNNNNTTTTAAAAANGNTTTTTTTTGTAAAAATNNNNNNNN

CNNNNNATCNCNNNTTTNNAANTTTTNTGACCNCTCCCNNGGGGNTTCTCTTTCTTTGNCAAAANAN  
CACCCNTCCNNNGGNCTTNNGANGGNGNCNTTTTCT

5 TTNAACAANAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GTAAAGGAAGTCAGCACCTATTTAAGAAAATTGGCTACAACCCCGACACAGTAGCATTGTGCCAATT  
TCTGGCTGGAATGGTGACAACATGCTAGAACCAAGTGCTAATATGCCATGGTTCAAGGGATGGAAAGT  
CACCCGTAAGGACGGCAATGCCAGTGGAACCAACCTGCTTGAAGCTCTGGATTGCATTCTGCCACCAA  
CTCGCCCAACTGACAAACCTTGCCTTCTCCAGGATGTCTATAAAATTGGTGGTATTGGTACTG  
10 TCCCTGTGGGTCGTGTGGAGACTGGTGTCTCAAACCTGGCATGGGTGGTCACCTTTGCTCCAGTCAAT  
GTAACAACTGAAGTGAAGTCTGTAGAAATGCACCATGAAGCATTGAGTGAAGCCCTTCTGGGGACA  
ATGTGGCTTTAATGTCAAAAACGTGTCTGTCAAAGATGTCCGTCGTGGCAATGTGGCTGGTGACAGCA  
AAAATGATCCACCCATGGAAGCTGCTGCTTACAGCTCAAGTGATTATTTGAACCATCCAGGCCAAA  
TCAAGTGCTGGATATGCACCTGGGCTGGATTGTACACAGCTTACATTTGCTTGCAAGTTTGCTTGAAC  
15 TGAANGAAAAAAATTGGATCGTCGNTCTGGGGAAAAAACTGGNAANAAGNCCCTAAAATTNTTGAA  
ATCTGGNGACNCTTGCCATCGNTGGAAATGGGTNCCTGGCNAANCCCTTGGNGGGCNAANAACTTTT  
TTTTAANTATNCCTCCCCTTGGGNCCGGTTTTTGCTTGGGCCGGGAAATTGAAAAAAAANNCNNT  
TGGGGGGGNGGNAATNNAANNCNNNNGGGACAAAAAAAGGCNANNTTGGAACCTGGCNAAGGGC  
CCCCAAANTTTTGCCA

20  
AAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGTAAAG  
GAAGTCAGCACCTATATTAAGAAAATTGGCTACAACCCCGACACAGTAGCATTGTGCCAATTTCTGG  
25 CTGGAATGGTGACAACATGCTAGAACCAAGTGCTAATATGCCATGGTTCAAGGGATGGAAAGTCACCC  
GTAAGGACGGCAATGCCAGTGGAACCAACCTGCTTGAAGCTCTGGATTGCATTCTGCCACCAACTCGC  
CCAAGTGAACAAACCTTGCCTTCTCCAGGATGTCTATAAAATTGGTGGTATTGGTACTGTCCCT  
GTGGGTCGTGTGGAGACTGGTGTCTCAAACCTGGCATGGTGGTCACCTTTGCTCCAGTCAATGTAACA  
ACTGAAGTGAAGTCTGTAGAAATGCACCATGAAGCATTGAGTGAAGCCCTTCTGGGGACAATGTGGG  
CTTTAATGTCAAAAACGTGTCTGTCAAAGATGTCCGTCGTGGCAATGTGGCTGGTGACAGCAAAAATG  
30 ATCCACCCATGGAAGCTGCTGGCTTTTACAGCTCANGTGATTATTTGAACCATCCAGGCCAAATCAG  
NGCTGGATATGCACCTGTGCTGGATTGTACACAGCTCACATTGCTTGCAAGTTTGCTGAACTGAAGG  
ANAAAAATTGATCGTCGTTCTGGGAAAAAGCCTGGAANATGGNCCCTAAAATTTNTTGAAAAATTGGGGG  
ACCCCTGCCATCGTTGGATATGGGTCTGGGCAAGCCCCATTGTGGGTGCGNAAAGCNTTTNTTTTGA  
TTATNCCCCCCCCCTNGGGCCCCGTTTTTGGTTGGGCGTGAAAATGGAAAAANAAAAANNTNCNTTTTN  
35 GGGTGTCTTTAAAAACCGGGGGGAAAAAAAAGGCANCTTTGGGACCTTGGNAAAGGNCCCAAA  
TTTTGNCCCCAAAAAAN

TTNANCAAACTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
40 ATTCGGCACGAGGCCGANGTCNNACGCGCGAGGCTGCTCTGCCGCCGCTGANATGCGTNACGTTGCCT  
CCTACTTGTTGGCCGCCCTCNGGGGCNACTCCTCCNCANNGCCAAGGACATNAAAAAGATCCTGGAC  
AGTGTGGGCATCTAGGCAGACGACGATCGGCTCAACANGGNCATCANNGAGCTCCACGGAAAGAACA  
TCNAGGGACGTCATTGCTCANGGTATCGGCAAGCTGGCCAGTGTGCCGGCTGGTGGGGCTGTGGCCGT  
CTNCGNTGCCCCAGGATCGGCAGCACCCGCTGNNGGTNCTGNTCCAGCCGCAGCAGANGANAAGANN  
45 GANGAGAANAAGGAANANCCGGAGGAGTGAGATGATNACANGGNCTTCGGCTNGTTTGACTANAGTC  
CCGCTCCTCTGCACANAAAACNTTTTTATGTAGGANACTTATTACANNANNNNNNTGGGGGGGNGCC  
CAACCCNNCCATTACNNTATTGGNCNGTTTTANAAANNCCNNNNANNNCCNNNNNGTGGGNGNCCNNT  
TNCCAANTCANNNCCNAANGGGGATGNNNTTNCCNNNNNNNGNNNNNTTTNNNNANGNGNNNNN  
NNNNNNNGNNNNNNNGNN  
50 NNNNNNNNTNN  
NN  
NN

55

NCAANANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAA  
TTCGGCACGAGGGTCATGCAGGCCCTGCTGGGCCCGCAGTCCCTGCCTCGGACCAAGGAGGAGAAGC  
ACAAGCCAGCCCCCAGGAGGACTCGGTAGCTGCCAGCAAGCAAGCTTCCCCAGCCCCAACATCAG  
CAGCGGCTCCCAGACCCCCCGGCGGAAAAAGTCGCCGTGATCTGTCAGCCACATGTCCTTAGAGGGTC  
5 AGGGTCGCGCTTGCTCTGGCTCTCTGCCACAGGAGGGCCAGCCGCGTGCCTTAGCCAGCTGCCAT  
GCAGACGCAGGTGAGGGTGTGGCTGTGGGGGGCGCCAGCCCTTCTGCTTCAAGGGCATCCCCCAC  
CCCCACCAGTCCGGTCCCAGGACACCCTCTGACCTGCTCGACGGCCAGGAGGCCCATGTGTGACCT  
GGCAATCGGGGACCCTTGCTCTCTGCCCCACGGCAGGGGTCCGAGTCTGAGCCCCAACCCCGGCTCC  
TGCACACGGGGTGGAGGTAGGGTGGGATGAGGCTGACCTGCTGGGAAAAGGAGGGAAGACGCCCC  
10 AAGGTCTCCTCTACAGCAGCCTGTCTGCGGTCCGATCCGTGAACCAATAAAGGCAATTGTGTCTGAC  
CAAAAAAAAAAAAAAAAAAAAAAAAAAANTTGGGGGGGGGGGCCGGNCCCAATTNCCCCTTTANNNGG  
GNGNN  
NN  
NN  
15 NNN  
C

NNNANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGGCAGGGAA  
20 AAGGTNGAAGATCTCCAGCCGAATTCATAGAGATTGGTAATCAACCANAGGTTACGAGCAGACATT  
TGACTGCTTACCTATCCAGACATTCTCTGGTCTCCCTAAATCTGAACCCACACCATGGATGATTTTGAA  
CGTCGCANAGAACTCAGAAGGCAAAAGCGAGAAGAGATGCGTCTGGAAGCAGAAAGAATCGCCTACC  
ANCGGAATGACGATGACGAGGAAGAGGCCCGCCGGGAACGGCGCCGCCGCGCCGACAGGAAAGGC  
25 TGCGGCAGAAGCAANAGGAAGAAGCCTTGGGGCAGGTGACCGACAGGTGGAGGTCAACACCCANA  
ACAGTGTGCTGACGAGGAGGTCAAGACAACCACGACCAACACTCAGGCGGAGGGCGATGATGAAGC  
TTGCTCTNCTGGANCNACTGGCTCGGCGGGAGGAAAGACGCCAAAAGCGCCTCCAGGAACCCTGGAC  
GACAGAAGGAGTTTGACCCACAATAACAGATGCCAGTTTGTCTNCTCTNCACANAAGAATGCCAAACC  
ACNCCACAGACAATGAAACNGCGGAAAAGGAAGGAANAANTGAAAGTCCCNGGAAAAGGCAGGACC  
TGGAAGNAAACCGANATACTCCCCNCTCNCNCCCAAAAAATGGATTGGGATGGAACCCGGNANAAA  
30 AAANNNNNNNNCCGNNNTCTTTTTNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
CCCNNTTCTTTTTTTTTNNNGGGGNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
NN  
NN  
35 NNNNNNC

NNCCCCGGCNCNTAGTCNTTNTCACTCNNNNNNACCNCNNTTNNAGCCCCTATAGTGGAGGTTTCGTA  
TTNCNTGGGCAGGNCGCTCTAGAACTAGTGGNTCCCCCGGGCTGCAGGCNTTCTCNCNCCANGNTTT  
TTNTTTTTTTTCTTCTNTGCTCTCNCNNGCNCNTTACCTCNGGGGGGCTNCCCGCTCNCNCTTCTTTGT  
40 TCCACACTTNTNGCTACGCNTCNGNCNGNTCNNNNCTCGCNGGCCTGCCNCTCCCCGTTNNCCTTGN  
TTNTNATACTNNTNTANTTGTTCNCCNCNCGCCGNTTCTCTGCTCTTCTNTACTTCTNTTACGACCN  
NCCCTCCNGNTCTNANTCGTNCCTTNGCNCNNGNNGCNCCTCTNGNNTTTTCTNCTNCTTCTCNGTGTNG  
TNCCCNATCCNTCCTGGGCTCTTNTCTNGCCGNTCCGCAGNNNACCNTTNNANNCTNCTNCTTTNCC  
45 CGGGCCNCCCNNGTCTCTCTCNCNAANNTTNGCGGGNCTCGNNTNGNGGTGATNNGCCTCNCN  
NTCTNCGNTGTCNGCTCTCNCNCGTNTTNGNCCCTNCCNTNNGCCGCCNTGCNCCCTNCCNTGCCAC  
CNCNTNGACNNNCCNCTGNNNNNTNCTCCTNCTNCGGTNCTANGTNTTNNCCCTATCTNCGGGNNNT  
TNNATTNTNCTNCTCNCNCTCNCNNGNNGCTCCNANNCTGCGTGGNTCNCGNCGTNTCCCCGNATTTT  
GNCNNGNTNTNCCCNCTNANGNTNNTCGGGCTNCCACTNATTTTCTNNTCNCNNTNGTNNCATNN  
50 CNTNTCCCCCCTACNNCNCNACTNNTNGCCNCTCCCTCGGGTNCCTCTTNNAAANNCTNCTACNTTNC  
NCCTCTCTTNCCTCCTTCCNCTCCCCCTACNTCTCCCGANTTAGTTATNCCCTCNCGACTNTTC  
TGCTCNCNNNNCTTGNNCATNCTTGTNTTCTGACTGACANGCCCGNAGCTTTGTTTCATTNNGCCT  
NTATNATTNCTCGTGNNTCANCCGNCCTNTCTCATCTGCTNNTNCGCCTANCTCGTGNCTATNCNT  
CCCACTCNANCCCTACTCTTCCNCTNCGTTATCCCCGNCNTAGTCCCGNACTTATTGNTCTTCTTCT  
NTCNCCTNNTTANCGTTNCCNATCNCCTTCTTCTNNTNACNNCAGTCTCTNCTACTGTCTCNCCT  
55 CAGNTCCTNTNCACTCNCNNGTNTCCTCTTNCCTTTGNNTACATCCTTNTGNCCTNCCGNGCNC  
TNGCCTCTTCTNTANTNNTCCTGCTGACTATANCCNCCCCG



GCCTATANNAGNNGNATTACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGNAGGAAN  
 TTCGGCACGAGGGGTCAGAGCCAGGTCCATTTTTTAAAAGGNAGCTGGCNGCTGTAATNACAAANCNTT  
 5 TTNANGGAAAANGGNACCTAAAAANTNNCTTNNNCCTTGNTNGTGNNTTTTNTTNAAAACNTTNACCNTT  
 NAAGGGGNAANNANANGGNNNNANAANGGGGNCNTTNNCNGTTGGGNNNATAACNNNACATAANTGAA  
 CCCTNGNGCNCNNGANCCAATGNAACNGGGNGCCANCCNCCTNANGACACCGGAAGAAGCNTNAACT  
 NGAGACACCCGGAGAGAACCCTTACCTGCGCAGGGACNTATAGATNTGTNTGCACAGANATTTATAN  
 AAGAGANCTNAGAGGGGGANATAANTAAAANGCGTGGCTCNCATGCNGNGCTNTAAGATNGGGACTC  
 10 NCNATCTGATNCCNCAGGGAGCTCTATATNGCNCNCCACTNTNCACGTGTGNTNNNCAANCCTCTATAT  
 GTNCCCNTANCCNCGCGCCTCNTNATCAATNCACACAATGGCATTTTTGTGGGGGCAAATTGTTNTTTA  
 NAAATAANNTCTCCACACCCCAACCCCATATATTAGGTGGAATAATAATCTCNAGGTGGTGGCCCTTTT  
 TCCCCTNGTNGCCCCCANANAAGGAGGAAGATANNATAATTGGGNCNTNGGAATNANCCATCCCCCT  
 GAACNTCCTGGTTTTTCCNCNAAANAACCTACCCACTTGGNGGAANGTTGGCAAGCCTTCCCCTTNNNT  
 15 TNCTTGCTGGTNNAACCCCTGGCCGTTGCCNCCAACCTTATTCTTCTCCCCCCCCAAAGAACTTGAN  
 TTGANCCCTTTGTTTGNNGGGGCCNGGGGGGNCNGNAATAAAAAACCCAACCCNTTCTTNTTTTTCCAC  
 CCNNCCCCCTTNAANGGGAAAAAGGNGCNTCCNTCC

GCCTATANNAGNNGNATTACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGNAGGAAN  
 TTCGGCACGAGGGGTCAGAGCCAGGTCCATTTTTTAAAAGGNAGCTGGCNGCTGTAATNACAAANCNTT  
 TTNANGGAAAANGGNACCTAAAAANTNNCTTNNNCCTTGNTNGTGNNTTTTNTTNAAAACNTTNACCNTT  
 NAAGGGGNAANNANANGGNNNNANAANGGGGNCNTTNNCNGTTGGGNNNATAACNNNACATAANTGAA  
 CCCTNGNGCNCNNGANCCAATGNAACNGGGNGCCANCCNCCTNANGACACCGGAAGAAGCNTNAACT  
 25 NGAGACACCCGGAGAGAACCCTTACCTGCGCAGGGACNTATAGATNTGTNTGCACAGANATTTATAN  
 AAGAGANCTNAGAGGGGGANATAANTAAAANGCGTGGCTCNCATGCNGNGCTNTAAGATNGGGACTC  
 NCNATCTGATNCCNCAGGGAGCTCTATATNGCNCNCCACTNTNCACGTGTGNTNNNCAANCCTCTATAT  
 GTNCCCNTANCCNCGCGCCTCNTNATCAATNCACACAATGGCATTTTTGTGGGGGCAAATTGTTNTTTA  
 NAAATAANNTCTCCACACCCCAACCCCATATATTAGGTGGAATAATAATCTCNAGGTGGTGGCCCTTTT  
 30 TCCCCTNGTNGCCCCCANANAAGGAGGAAGATANNATAATTGGGNCNTNGGAATNANCCATCCCCCT  
 GAACNTCCTGGTTTTTCCNCNAAANAACCTACCCACTTGGNGGAANGTTGGCAAGCCTTCCCCTTNNNT  
 TNCTTGCTGGTNNAACCCCTGGCCGTTGCCNCCAACCTTATTCTTCTCCCCCCCCAAAGAACTTGAN  
 TTGANCCCTTTGTTTGNNGGGGCCNGGGGGGNCNGNAATAAAAAACCCAACCCNTTCTTNTTTTTCCAC  
 CCNNCCCCCTTNAANGGGAAAAAGGNGCNTCCNTCC

TTNANAACAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 AATNNNNCACNANGANNTGGNCCTGANNCCANNCGCCANNGGNNNTTANGGGGTNGGCCCAAACCT  
 NGGNGTGNCAANATTTTCTTAATCTGANCTTCAAANNCCCTACTGGGTGGAAGCCCTAANGCCGATATG  
 40 ACAAGGTGCCTTCCCCTATCTGGAACCTTGACTNTAACCTNCATACCGCNTTTGTNTNTNCNCGGACCC  
 TGNTGGNNGACANCTNACTGACACGNTGGGACNCTGATGGTGATNGCCTGACTCCCAAATCNCCTNC  
 CCTTCNCTTATGNAAGTGGTGGNAACAAAAANCAANTTGCCNNGGNGGGGNGAGGAAACCACAAN  
 GNCCTGAACNAAGGAANGGTTCCTTGNCAAGGGNTGGCNNAAGGCCGNTTTTGNACNTTCTANTAGN  
 NNTNACTTTNNTTANTTACCNGGTCACTTANTGGATTAATTAAGGCCCTTATNNNNCTNGNAACNT  
 45 NCGGANTTCATTCTTANGNACNGTTAATTTGGNTAANCNTATANGCATGGGGAGGCNNGAAATA  
 GGGGACNCTNGGGTTNANANAAAAAGAAANAAAAACCAACCCCCCTGCCCCCCTTTTTNTGAATC  
 NAAATTNTTCAAGGGGGAATGGNGGGNGAAAAACNTTTTANTNGNGCCCGGCNNACTTNAATGG  
 NNAAGGGGGGAACCTTTAANACCCCCCGGCCCTGGGGGAAANCCCCCTTTAAATCTTTTCCCN  
 GTTGGGGATNCCANAGGCTTTTTTGGGGCTNTTTGGGGGGGAAAAAGAAAAAATTTNCCCGGN  
 50 CCTTNCNNTTCCNTTTGCCCGTTTTTAAAAAANGGGGCCNTNGGGCCCTTTGTAAAAAATTTCCC  
 CCATTNCNTTTTTNCCCCCTAAANCCCATTTGNGNCCCACCCCTTGNGN

TTNANCACAACTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 55 NTCTNAACCAACCATAAAGGATTGGAACCCCTTATCTACTATNGGNGCTTGGGCCGGTATAGNANGA  
 ACAGNTCTNNGCCTTCTAANTCGCGCTGAANNAGGCCAACCCGGAACCTGGTGCTCGNAGACGACCAA



ATCTACAACGTAGATGTGAACCGCACACGCATTTGCAATAATCNTCTTCATAGTAATACCAATCATAA  
 TTGGAGGATTTCGGGTAAGTACTGACTTGTTCCTTAATAATTGGNGCTCCCGATNTAGCATTTCNCGAATA  
 AATAATATAAGCTTCTGACTCCTCCCTNCNTCATTCCCTACTACTCNTCNCATCCTCTATAGNNGAAGCT  
 5 GGGGCAGGAACAGGCTGAACCGTGTACCCTCCCTTAGCAGGCAACCTANCCCATGCAGGAGCTTANA  
 GTAGANNTAACCATTTTCTCTTTACACTTAGCAGGAGTTTCTCAATTNTANGAGCCATCAACTTCATN  
 ACAACAATTATNAACATAAAGCCCCCGNAATGTCACAATAACCATACCCCTCTGGTCGTATGATCCGA  
 ATAATACCGGNGGGCTACTACTCTCGCTNCCTGNATTAAGAAGCCGGGATCACAATGCTATTAAC  
 AGACCGGAACCTAAATACAACCTTTTTTGAACCCCGGGNGGAGGGNGGANANCCTTTTTNTATATCAA  
 10 CCCTTATTCTGGATTNTTTGGGACNCCCCCGAAAGNCTAAAATTTAAANCCTTACCCNGGGGTNGG  
 AAAAAATCTNNTCAAAATCGGGGANCCTACTTCCTTCGGGNAAAAAANAANCCTTTTCNGGAATTT  
 TTNGGGNAANAGGGTNGGGGCTTTTAAAGGGCCAAACNGGAANTNTAAGGGTTTCAATCGGGANGA  
 ANCCCCCCCCATTN





NTNAAANNNAANCCCCNAACCTTANTTTTCNNGGNNNNNCNNGCTNNNGGNTTTTAAAGGNCCNTTANNC  
 CTTTTTTTNGGNCCTNNNCNNAACNTANCNAGAACTGGATGNCNNGACCTTGGTCCCANGTTAACNTC  
 ANNTCTGGNGTCATTANTTGGCCTGCCAGTGGTCTTATAAAATTAGCAGGCNCACAATCTGGGAGGAN  
 ATATATTTAAGNGCANGGGGANANGCTCAATCATTGCGTGCGCTTTANNNGTATGANANANNNATCTT  
 5 ATCACCTNTAGGGANNAGAAAAGAGATGAGNGCGNTAATTTCANAAAACCTGAGTANGGAGGANATG  
 CGCCAGACAACANCNTCGCTGNATTTNCNCTCCCTNGTGGGNAGAGGNGNTACCCCTCTCNNCCAGAAC  
 CCCAGAAGAACCTCCACTTTTGNAGAAGCTCTTTTNTNCCNNAAGANCCTGGCTGAANAANACTGCC  
 AAAACCATACTTCNAGAATGAGGANTCTCAGTGGGGGGGCNAAGNACTGNTGGGGGGCNCCATCCTC  
 ACAAGNGGGTTCNGGAAGNTAATGGGGGNCCTCCNTTTTTTNATTGGATGACCNCCTTAAACCNCN  
 10 TTTGGNAGGNANTTGGGAGGGGAACCCNCCCCAGCGGGGGGGAANAAAANACNCCGNTTNGTTCC  
 TTGGAANGNCTNNGANNNAAAAACANTTGNCCCCNCGGAAAGGANTNGAANGGGTTGGGAAACC  
 TGGCCTTTCNTTTCCCC

TTGAANACANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 CTANGTTGCNTNANCATGGCTAAACGCACCAAGANNNGNNGAATCNTGGGCNANTACGGGACCCGTN  
 ATGGTGCCTCNCCTCATGAANATGGTNAAGANNATNGAAATCATCCAGCACGCCAAGTATACCTGCTCC  
 TTCTGTGGCNAAACCAAGATGAAAAGAATAGCTGTGGNCATTGGCNCTGNGNTTCCTGCATGAAAAC  
 AGTANCTGNTGGTGCCTGGACCTACANCAACCACTCTGCCGTACAGNCAAGNCCNNCATCANANGAC  
 20 TGAAGGAACTGAAGGACCAGNAGAGGCNCCACCATTCGATACCTTGCTAGCCTATNAAATGGGTTA  
 ATTTATCTANCNGAANATCCTTTTTTCCACCTCGGGATGCCCGCNTNNTGTNAAAAGGGGTTNCNNG  
 GNACCTTTTTCTTTAAANNNTAAAACCGCNCNCGACCANCCTTNGGGTAAAAANCANAGGAAAAAAC  
 NTNCAAACCGGNNTNTTGGACCNTAGACNANATCGNGCTTTTGGATTNNTGGGGAACANTTCCGTGN  
 GCCATTTTGACATTCAAATNTNGGTTTTTTGTTTGCAAANGCCANTTCNNNNCCCTGGGCCTTGGGTN  
 25 GGGGNAAAANGGCCCCCCTTTTGGCNAAAAANTTTCCTTGGCTTAACCTTTNAAAANGNTNTTTTTT  
 TTTANCTNCAACCAAAAGNCCCCCTTGTTTTTAANNCCCCCTCNAANCTNGGGGNNTTGNNTTGGNN  
 GNGTTCCNANTNCNGNNNGAAAAAACNCNNTTANGGGGTTTNGNGNGNTTNTTGGATTGTTTTTC  
 TTGGGNCCAAANAAANCTTTTNAACCAACNNNAANGGGCCCCGGGTGNGGCCCTTTTTTGGG  
 NAATNAATATTAANGGGTNT

NAAAAGCTGGAGCTCCACCGCGGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGTT  
 TTGTTCTTATTTTACTAATGATAATTAACATCCAACATGGCTTCTCATGCTATTTCTACCTCACTTTGG  
 TTTTGGGGTGTTCCTAATAATTGTGCACACCTGATTTCACAGCTTCACCACCTGTCCATTGTGTGAACA  
 35 TTTTCTCCATTTTCTTTTCTTTTATAATTTCCAAAAGAAAACCCAAAGCTCTAAGGTAACAAATGAC  
 ATGAAGATTTGATTTTAGTCTTGGCTTTTTTTTTTTTTTTTNCNNTTAAAGGNNCNNGGANTTTTTTTT  
 NCNGNAAATTNGGGCCTTTNTTTTTTTTTTTTTTTTAAANCCNGNNNTAAAAAANGGGNTTNTTTT  
 TTNNNNAAAAAANTTNAANTTTTTTTTTTAAANNCNNGGGGAAAAAANGGNNGGGTTTNGGTAAAA  
 NNTTTTTGGGTNAANTTAANNTTTAAANNNNTNNNTNGGGGGGGGGCCCAAAANTTTTNAAAAAAA  
 40 NCGGNANGCTTTNTNGNCNNNTTTNANNNCNNNAATNGGGNNAATTTTTTNGNGNNCNTTTANCCCCCN  
 AGGNNAANGGGAAGCNCNNAAGGGANCNNGAANCAAAACCCCCCGGGGGNGTTTNNNTTTGTT  
 TTAAGGGGNCNGGGNTTTTAAATGGGGAACCNAAAAAATTNGGGTTAAACCCCCCACCNGGGA  
 CCCNTCCCCCAAANNTTTTTTTTAAAAANNTNNNTTNNCCGGNGTTTCCCCAAANATTNAAANNTT  
 TCCCCAAAAAANNNCCCCCNAAANTGGGGNNAANAAANCCGGGGNTNNGGGGGGNNNCCNAAAAA  
 45 AANNCCCCCCTTTTNTTNAAAAAAANNN  
 CCCCTTNN

TTNNANCNCNATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
 50 GGAATTCGGCACGAGGACGNTTGCANCCAACATTTACAACAAACAGAGTTTCACCCAGAGTTTGAA  
 GAGGAGAATATCACTGAAGAATATATTTTATTCCTGTGGTGTAACTATGAAATAGTATCCAACATAC  
 CAAAGGCAACAGAGGAGATTGAGGACCGGGAGACGCTGGCTCTCATGGCTGCAAGGAGTTGAGAATG  
 AAGGCACATCGGATGGGGAGACGTACATCGAGAAGTACACGCGGGGCGTGCTGCAGGTGGAGAACAT  
 TCTGAGCCTGGAACGACTCCGGCAGGCGCTGACGGCNAAAGNAGCACTTTCACCAAAAGCTCGGCAC  
 55 CTACCGCGAAGCCTCAGCACGCCCAACGTTTACAATGTCTNTTCCAGTCGACCAGACCTTTCTGGNTT  
 GACGATGATGATAAGGGTTGGCCAGAGAACCAGTTAGACATGTNTGATTACAGCCCAGATTACCAGG

ATGTATCGNGTTATGGAACCTTTGCCTAGGGATTACCTCGAAGGAGTAAAGAAGGTATGGTTGTACAT  
 TANAAAAATNCTCNTGCCTTAANAGTCAGCCCTTTTAAAAAGCATTTTTTCTTAAGCCACCAAAGTTTTT  
 TTCAAGNCCNTTATTGCNTTGTAAAAAGAGGGGNCCTTTAAAAAAGGGNNTAGNGGCTTGAAACC  
 ANNGGCCCTTTTTTAAANCCNNGGNGGGNCTNTTGGGGGGGGGGGGGAAAATTGTTTTTNAAGG  
 5 GTCTTAAACCGGGAAGCTTNTATANTTTTNNCCNCCCTTTTGTTCCTTGGGGGGAGGTTCCGCT  
 TGACTTTNAAANNNTTTNCCAAATGGCCCGGTTTGGGAAAAAAACAAAAAANNGNGTTTTTTTT  
 TTTAAANGGNN  
  
 10 NCGNGCNCNCNTGNCTCNTTNNNCNNTNNNNNNNNNTNNNNNCNCNCCCCNCNCTTTNNNTNANC  
 CTCTANCCCTACNCCACNNNCNANCNCNCAAGGGGNGTNCNATATTNNATTGTCNTATNTTAAAGCC  
 NANCNGGAGTTTCGCATNACAGNGGCGNCCGCTCTAAACTNGTGNTATCCCCCGGGCTCGNAGGAA  
 TTGGGGCCCCAGGCNATNNTTATTCTGCNTTTTGTNNANCTGTNCCGGGNCNTCNNNNNGTNATCC  
 NNCTTNNCATAACTNANNTTNTNCAGNACCACTCCTNGNNNGTNNNNNATAANNNNNGTTCTAATNCT  
 15 TTTCTCCCGGNCNTTTTCTGNNCTCACTTCATTAAANNNTAATACTTNNGCCNCNTNNTNNTACAC  
 CATNTTNGCTATCANNNNAGCANNNTTNTNNNCNNACCTNTATCNTCNTNNTCNTATNNNNCTNTT  
 CNCTTNTTCTTAAGCAGNNNGTNTANTNNTNTNCTTNTNNNNNNNGNTTNGCNCNCNTCCNTAN  
 TTGNAACTACCTCCCTCTNANAANTTNNCNANTNCATNTTCTCNCNTNNTCTATTTTTANTTTCTATTN  
 NNGNTNTCCCCNCNCTTCTCTTNAATNANNTTTTNCNCCCCCNNTNACNNCNCNCTTCTTCTNGTNCCA  
 20 GNGGTCCCNNCANTGTNTTTTNTCTAACNCGCTTNNNAGNNNTGTNNNTCNTNTNNTNGCTNNCN  
 ACTNNNCNNNNGNATNNNGGCGCTATNNNNNTCCNNNCACNCANCCNCTNTTNCNTCGAGTCTN  
 NANTTANCCGCTTCTNANTCNTCNAATNTCTATNATNTCTNNTNACTGNTAAGNCNGCCGGTNTCANN  
 GNTNGANTCATTANNTNTTANCANNATCACGNNCTAGCNANTTTTNNANCNNCTANTTGTNTAGTANA  
 TNNCNNTNNTTNCATGCGCTTCTNCTNTTGCNCTATCTNTTNCNNNGATCNCNACNNTCCATCTCN  
 25 TTTANTNGCTNATTNCACTTANNTGTGANCATATCNTANTGACACNGTNGCGGTCTATNAGCTTCNTA  
 TNNNANCNCNNNNGTNNANNNCNCCTGNNNCNTNCGTANNCNTATNTNTCTTTNCANNNCNCGTAT  
 NCCNCCTTCGTTNCNNGNAGNGTGTNNCNGATGCTGCNCACTGTTCTCNNNTACANNNGTNCANNT  
 NTCTTTTACTCNCNNNCNNANACNCANGCNNNNNNAGNNCGNTTANNNNCNCNTCATCNTACTNATN  
 NANACGANAAATNCNCTGACNNNNCANAGANATGCCTNNACACCGANCCAGACANCGACTGTCNCACG  
 30 TTTGNCNCNANNTTNTTGNNTACNAGTNANANACGCTGCATAGNNAATNTNTNANTNTNCTNCGAGTT  
 ANANATCTANTGACAGNNATCGCTCGNATNNTNATGNAANATTNATNTGNCGANAGNTTNTNNA  
 NGCTCNATNATCATNTGATNTTACGCC  
  
 35 NNNNACTGGAGCTCCACCGCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCCGG  
 CCTTCAAGTGGTGGCTGACAGGCCTGGTAGTGGGGAAGGGTGTCTGGGTTGTTAGAGGGTCTCCAGG  
 CTCTTCTGGTTGTCTTCCCTCCCTTTTCCACCATGAGATCTATGCCACACAGGCCAGTGTCTGCAGAA  
 CCTTGCTTTCTAGGTTTGGTTTCTGANCTCCTGTCTGTACTTTTGCCTCCTCCAAGGTTTTTCCCCTAAA  
 AATCCCCATTCTCATGCCTCCCCACTGTGGGTCTCCTTGCTTTCTTGCAAGTTGGACAGTCTCTGC  
 40 CTNTTGGCCAGACCCCATCCATTTGGACTGCCTAAGTCACTCGAGATCGACCCCAACCCACACGTACA  
 ACCCCAGTGGCCAGAGTAGGCAGGGAGAAAGTGAAGAGAATCCAGCTGCCTCTCGAGGGAAGTGAGA  
 TGTGTGAGAGCACTGTANCTCCCCACCTGTGGACTCTGGGCCAAGAAAGGCGTGTGANTATCTGGCGC  
 ANGGTGCCAACATTCTTGCAAGCAGCTGCTGAAATCTGCATCTTCCCAGTTGGCTGGTACTCCATANCC  
 CTGGACTTCTGCCCCCTTCTTCTNCTGTTGGTCTGCCCTTCTCANAACAGANCCTTTCCCTTCACTC  
 45 CNTGGCCCCCNTGGGCTGACCAAAATGGTGNTTTTTATGGGANCCCCCTTGGCCCAANAACCCTGGG  
 GGCAAGAAAANACTGGCATGAATGNAAAAACCGCCTTCTNGCTTCTTGGGAGGCAGGCTTTTGNNG  
 GCAAAAGGAAAAAGGGTCCCGGCTNGCCCTTTGGGNAANGCAATTNTTNTTGTGNGGAAGGGGG  
 CCCTTCGACCCCCCTTNGTGTGNGGNCACCCCCCCCCNNGGTTTNTTTTTTAAAAAGAAACCC  
 AGGGNTNCCNCCCCCTTCCCGGGNANAAGGGGAANCTCG  
  
 50  
  
 55 GCCCTATNNGGAGCNGCATNNCAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAA  
 TNCGNACAGAGNNTGTCTTTANCGTNCNCNTNGAGGGGNNCCNGGTTCTCNGNACCCCNANAN  
 NNACACCTNNTNGNAATCGGNNNTTCCNACAAANCCTGNCTGNCNNATNGNNANATNTNGNCNNA  
 NATCCNACNANACNANAGTTCCCATTCNTTCTTNNNGGANNNAAAGACANTNAAAANNGGAAGCA  
 GGGNGGGNANNAGGGNNACNGNCCNAAACCCTNGAAAANNGCCTTNNAAACCGNGGAGNGAAATCCC

NTACCNATATTNAAACNGCCNGCCNCTCTTGNCAAAAACCNAAANNATATTNCCCTNGTTGGTCNGTNAACCCNCAATNAAANACNGNATANANCCGGATACANATNTACCCATNTNGNNCCACCAANGCCAATGGGTGGCTNCCCTTTNTTACCAAANCNNGNTTTCNNTGGCTCTNAANGGCAGTCCGGCTNACNTTTAAAGATAANGGAANGTGGATNNGNTNCNATNAACTNANANGANNTTCGNAANGNNACCTATGNANAANAAGANCCCCANNTTTGNTCCTNNCCACCTNTGGGTTNGGTTNNNNTNANCNNTAAAGGNANACTNCNATTT5  
CCCTCCGGNGANTAANTCNCTTACAAAAANGCNANCAANNTATTTGNGCTACTTTTTAAAAANACCAGATNNNTCAATTATTNAGCCCNCTTATNCCCTCTTNANTCCATANNNCNTTGGGGGNCNCGGNTGTATTTAAAGGTCTTNTNNTAANNNAATTAANTNTNNNACCNCTAAGGNAGCCCCNCCCNCTNCNANAN10  
NGGGNAANTTCNNNNNTTNTTCCGCNGNGCGNNGNCCCTTTNGTCNCACTNNCNCTTNCCTATCTTAA  
NCCNNTNNGNGNCTNCTNTNNTTATCNGTANGAGGTCNNNGGAGNTANNNGNACCANCCCTCCNNT  
TNNCNGANGNNTNNNCGNC

GCCTATANNGAGNNGNATTACAGGNGGCGGCCGCTCTAGAACTAGGTGGATCCCCGGGGCTGCAGGAANTTCGGCACGAGGCTGACACTTTGTATTTCTCTGGCGAAGAGAACTNGGCATCTTCCTNAAAACCC15  
CTGCCNNTCGGAAANTNNAACAAANCAANNCCNNTTTTTNACCCCTNANTTNCNANTTTTAAANTNAAANNNAANCCCCNAACCTTANTTTCNNGGNNNNCNNGCTNNNGGNTTTTAAAGGNCCNTTANNCCTTTTTTTNGNCCTNNNCNNAACNTANCNAGAACTGGATGNCNNGACCTTGGTCCCANGTAAACNTC  
ANNTCTGGNGTCATTANTTGCCTGCCAGTGGTCTTATAAAATTAGCAGGCNCACAATCTGGGAGGAN20  
ATATATTTAAGNGCANGGGGANANGCTCAATCATTCGCTGCGCTTTANNNGTATGANANANNNTCTTATCACCTNTAGGGANNAGAAAAGAGATGAGNGCGNTAATTCANAAAACCTGAGTANGGAGGANATGCGCCAGACAACANCNTCGCTGNATTTCNCTCCCTNGTGGGNAGAGGNGNTACCCCTCTCNCCAGAAC  
CCCAGAGAACCTCCACTTTTGNAGAAGCTCTTTNTNCCNNAAGANCCTGGCTGAANAANACTGCCC25  
AAAACCATACTTCNAGAATGAGGANTCTCAGTGGGGGGGCNAAGNACTGNTGGGGGGCNCCATCCTCACAAGGNGGGTCNGGGAAGNTAATGGGGGNCCCTCCNNTTTTTTNATTGGATGACCNCTTAAACNCNCTTTGGNAGGNANTTGGGAGGGGAACCCCNCCCCAGCGGGGGGAAANAAANACNCCGNTTNGTTCC  
TTGGAANGNCTNNGANNNAACANTTGNCCCCNCGGGAAGGANTNGAANGGGTTGGGAAAACC  
TGGCCTTCCNNTTCCCC

TNANCAANANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGGCTGCAGGCCGCGGATCTGTCTCTTGCTTCAACAGTGCTTGACGGAACAGACCCAGGGACGCCNTTGCTCCA30  
NCCCTCCGACCACNTCNANCNTTTTTTCNAGCCNNANCNTTNGNAGNNAGCCNTTNANTNGNCNGGAA  
NNNCNGGANCNANCCNCNNTTTTTAANNTCNTNATANTANCNNNCNANNNNNNACNTCCNAAATNNG35  
NAAAANTANTNTNNCNNGGGGNGGCNGCNGCNACCNGCNGNGGTAACANNGNANTGGGGGGCCNTCTAACCTATACTTTNTTTGGGTNTATTTTCACACGCGNAACNATGGCCCTGTGAGAGGGTGNGGNA  
CANTTTTTTCGANAATNGNCCAAGAGAAAAGCGAGAGGGCGCNGAGCGTCTTNNNANNGTGNAANAN  
NAGNGGGGGGGGCGCNCCTCTTNTGNNNNNGCNCAANCCNTATCAAAAAGAGAGGGGNGAAAANCA  
CGAGACTNTNNGGCGCCCTTTTCNAGAAAAAAAACCNAGNANCACCCNGTGGANATNTGGGNGCTG40  
NGTCTTGNCCCGAGACACCCACNTGTGACNTCTTTGGTGGAAAACCTCCTTCTATGANGAAGGGGAG  
NTCCTCATCAAGAAGGGGGGCNATCTTANNAACCTCCTCCGGATGGTTGGTGGCCNCCATGGTGNGGN  
NGAGGAANTTTTTNTTAANNNGNNGCTCCCCNTCNANNACTAATAAGGTTCTTGNGAACAACCGGNCGG  
TCANTTGAAAAACCCCACTAAANGGGNGGCTGGAAAGACCCCCCTTTNNGGAAATAAGGAAGGTT  
TTTTTTAAAAAACCCGGGGGGGCNCCNTTTNNTCCNNGGNNGNANNGNAAAGNAAAAANNTTT45

TTGANAANNNTGGAGCTCCACCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGGCTGCAGGAANNNNCCANGAGGCTNNACNTNANANGAGCTTTNNGTGTNCTCNANGTNNAACNCCGCNTANCT50  
NTGTGATTNGCCTNNAACNTCNNTGNCCCTGGTTNTGCTNNNCCNACCNCCTATCTANNCTNTCNANATC  
CNNATNATGNNATANATGANAACCCGGACAAAGCNCAATTCGTGGGCCCCCTTACCCTAGCATGTCCA  
GAACGGNTTTANGANTGGANTACGNTTTTTTNNTTATAAACNGAANCCNATTCTTTACCGNTTTTTTT  
TGAGCTTAGTACCNTAANNCCCTTGCCCCGGCCATNAATTAGGGGANTNCTGNCNGGGGNGNGGCN  
TTANCCCATTAANCCTTTTNGANGTNNAANNNGNNAATCACNTCTGTCNNATGGGTTTCCGAAGTTTCT  
ATTACTTGAGCCAATNTTANNAACAANNAGGGGACNCCGAAGGNNNATGNTTACATGGCCTTATTNA55  
TGGCCATCNCCTTTGGTNATTGTTNTTAGGGCCAATAANAGGCNTTAAATACACTTNNAAACACACTTT  
TNNNNATANCTCNCCGGGTTTTTCCGGATNTAANTTTTTTTTTTTTGTGNAAAAGGGGNTTCCCTTNGC

5 TCTAAAGGAAAAANAANTGGGGGNCACCCCTTTTCTAAAATGNGNGAGNTNTCTTTTCGCCNCNTTAA  
 AAAATTTTTTTTTTCNTTTTTNNNTAANCCNCCCTTTTCNTCTTTTAAACCCNTNTGGCGGNGAAANGTNA  
 TTTTGGAAAANGGGGNTTACACTTTTCCCNTTTGAANAATATTTGTTGNGGGGGGNNCNTTTTTTAA  
 ANANGANGNCNCNCTTTTNGNCCNNGGNTTNTNNGNANTTNGCCCCNCCCATNNNCCCNNTTNN  
 ACTGGGGGGGGGGGGGGGNTTNNCCCNNTNATTTNNGNAAANNAAATATGGGGCCT

10 TTGANCACAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 AATTCGGCACGAGGCTTTANATAGTATTTTAAAAGGTAACCTAATGCTTTTGACAGTATAAACAAAAAG  
 CAAGAATATAAGGCCTAGAAAAATTGTCCTTCGAAAAATATCAATGATGTACCTGGAATGTGAAGATG  
 TCCCTTATAGTTTAAATTGATTTATTTGAATATTGTAATCACTCTTCAGACTTTGAATGAGTCATTACA  
 GTGTGTATCTGTATATCTGTAGAGAAAAATGACAACCGAAATGTAACCTTTAAAATCAATAAATTTGGC  
 ACTGTCTGTTGCACCACTACTGTATCTTTTGAAGAATTAACAGTATTTTCTTATTGTAAAAGGTAATT  
 CTGATGATTCCACATTCACCAGACATGTATTTTTTTTTTCTGTACTATTTGCATCCCCAAATATTTAAT  
 15 ACAAGTAGGTTTTGCACGGCTTGANCNTTCAGAGATTAACAGAATGACANCTCANTTTTAATTTCTAAA  
 GCCATGAAATGTTGCTTTGANACTGAACAATCTGAATCTTATTATAATGACNCCCAATATCCATGTTT  
 CCCTACTGGAAAANACCTGACAGTTCTTGCCTACACAGCAAGAACTTATTAAATCTTGAAATNCCGG  
 GCCTNTTTTAAATTCTGGGGANGCCGGGAAACAAAATATTTTGAGGGGAAATTTGGTNTAANACAAAG  
 GCNTTTGAAAAGGNTTTGCTGGCTTNAACCTCCAACAGGTACATTNTTCGGAAAGGCAACGATTCCC  
 20 TGCGAAATAAATTTAATAAAGGTAAAAGCCCAACCCTTAAAAAAGGCAACGATTCCC  
 GGGGGCCCCGGNNCCCCAATTTCCCCCTTAANGGGGGNNNC

25 AGNNNNNNNNGGNNNNNTTNANAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTG  
 GATCCCCCGGGCTGCAGGAATTNGNTNCTNNNNNTNCTANTNCTNTATAANNACGCACAACCTCTG  
 GNNCATTNTCANGNNNAGNNTGTAANNCGTGNCTCNATAAAAANGCANNANNGGANTAANANTANNGC  
 NGCCTNNCTNCGTGAANGCTTNCCATANCTATTNTNCATTACATTCCACATCANGATATCGAAACNAT  
 TCTACANNNTATNNACACTAGCATNACATTATNTNTATTNGCTTTACTTNTCTATACNNGGAAACTGN  
 30 GGTTTACTCTNTNAAATATTTATTGTANGTCACNTTANCTATCNNACTCTTGANNGGTNTNNAACNAC  
 TTNACCAGAACTACCTATTGGGTAANGATNACATTACTGANCCCCACTTANAACCTTNAACCTGNAATGN  
 TNTCTTGCNCTAAAAGTGAAGCTGNCTAANTTANTGAAAANTACNNGTGNCCCCCTACGCANTTGCACNA  
 AATAAAACCNNTNTTNTCTTNTNCCCCAAAAANATGNNTTGNCTTAATTTCCACATAAANGTTNATTTT  
 CACCTCAAATANACTTNAAAAATTTNTTTCTATANGTNNGGGNCNCCCCAATTNTAAACTTTNCCCGNCC  
 CCNTTAAANAAATTTCTTNTTCNAGTTTTTTTTANCTTTTTNCCCNAAANAATCATTGGNNGGGGGCNCCC  
 35 TGGNAACNCACTGGCGNTCTTNTCCNAGCACTNANTTTNNTNGCCCGGAAACCCAAATTTCCNTTTTT  
 CCCTNGGGANNTCTTGNGTNAAAANCCCCCNNGTTTTTTTTTAAGAAANCTNTTGNCTTNGGCTTTAA  
 AACCCCNCTCTTNCNANANNGGGTTTGGGGCGTGGACCAAGGAAATTTNCCCCATTANCCCAACCC  
 AAGGGTTTTNTGGGGGAAGGTTCCCAAAGCCAAANNACNCNCGGGGTGNGTGCCCCNNGAAAC  
 CCCCCCTTNGGGTTTTNNGGGGNNNNNTTTTTCCNAAN

40 ANCAANACTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
 CGGCACGAGGCCTTGACGGGCCTCACCAGAGGGGCCACCTACAACATCATAGTGGAGGCAGTAAAAG  
 45 ACCAGCAGAGGCANAAGGTTTCGCGAGGAGGTGGTTACCGNNGGCAATTCTGTTGACCAGGGCCTGAG  
 TCAGCCACANATGACTCCTGCTTCNACCCCTACACGGTCTNCCATTATGCCATTGGAGAGGAGNGGN  
 ANCGATTGTCTGANTCTGGCTTTAACTCTCGNGCCAGNGCTTATGCTTTGGCAGAAGGTCAATTNACA  
 TGCAATTCATCTANATGGTGCCNTGANAATGGAATGAACTNCCANATTGGATAGNAGNNNNATGGTA  
 AGGNATAGAATGGCCAAATGATGAGCTGNCTTNTCTTGGAAANTGGACTTTGAGAGTTNAAAGTGTGATC  
 CTCATGNGGGCCGNTGCTATCCGATGGGATGACTTACCACNNNTGGNAGAACAGNGGNGGANGCGACT  
 50 GTCTTGGGGCCNTTTGCTTACTGCACATGCTTTGGAGGCCAACGAAGNTTGGCGCTTTGACAACTGAC  
 NNAACCTGGNGCTTGAACCCGGTACCTAANGCTTCCANTGGCCACTCTACAACCAGTTTTTCCAGA  
 NNTTCCATCCGAGAACAAAACCTTAATGTCAACTGGGCCAATTGAGTGCTTCATTGCCTTTTGGATGTN  
 CAGGCTTGACNTANAAAAATTTCCCGAAAAGTAANTTTTTTCCAACCCCANAAAAACAAGCGGTGG  
 55 GATTTTCTTGNCCAAGNTCCCTTNCCAAACCTGGGAAGNGGNGNNTTCCCAANACCCCCCATNTTTAAG  
 GGGNGTTCCTTTTNTTAAACCCCTTTTTTNTTTTGGGAAANAACTT



GCCTATNNGGAGCTNCANCNCAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
 CGGCACGAGGAGAGATGGGAGGGTGATCACACTGTCTCATGAGGGCCAGGAGCTTCAGGACTTCCTTC  
 TGTCTCAGATGTCACAGCATCAGGTGCACGCAGTTCAGCAGCTAGCCAAGGTTATGGGCTGGCAGGTC  
 5 CTGAGCTTCAGTAATCACGTGGGACTGGGGCCTGTAGAGAGCATTGGCAATGCCTCTGCCATAACTGT  
 GGCCTCCCCGAACGGTGACTATGCTATCTCAGTTCGTAATGGCCCTGAAAGTGGCAGCAAGATTATGG  
 TTCAGTTTCCCCGTAACCAAGTGTAAAGACCTTCCAAAAAGTGATGTTTTACAAGATAGCAAGTGGAAT  
 CATCTTCGTGGGCCATTCAAAGAAGTTCAGTGGAATAAAATGGAAGGCCGAAACTTTGTTTATAAAAT  
 GGAGCTGCTTATGTCTGCACTTAGTCCTTGTCTACTGTGATTTTTTTTTTCTGGACCAGTTTCCAGATTTT  
 10 TTTTCCCCAGAGAAGTTTCCAGAACTTTTCAGGAATGTTTGCAGATCAACAATAAGCACAAAGAAGAG  
 GAATCTTCTAAAGGAATATTGTTTTTAAAAAGTAATAATTAGCAAATGTTTATTTAGCATTTTGAACCC  
 TTTCACTTTTATAAGTGACAAAGTGCTTTAAATGCAAAAAAGTTTATGTACAGTTATAGGGTATACCA  
 ANCATGGAAGAGATGGTNCTTTTTTTATGCAGTTGGACTTGAAACATTACTACATTGGATGGCATTAGC  
 TTTTTAAAAATATCCCNTTGATGTTGANATCCAAATAAAGATTTTGGTTAAAAAATCCNAACCCNTNGA  
 15 ACCCTTAAACCTAAATNNATTATNGCNTAACCATTTCCNTTGTGTTGTTNATGGCTTNAAAAAAANTTAA  
 AACCCNTAAAAACCCAGCTTTTNACAAAAAATCT

NCCNATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGTTTTT  
 20 NANGAATGGCAGCTTTAATCATCCTGGCCAAGGCCCTCAGGCTCCCTCCACTGCAGGCCTCCTTGGTC  
 ATAAACCCACCATCAACCATGCCTGAACACTTTTCCCAGGTGGCCCCCTGCTCTTGGCCACTGACGTGGG  
 AACCTGAGGTCATGTCAGTCTGTGGATCTCTCCTGGGTGTGGATCCAGCAGCCCTGAGCCTGCTCTTGC  
 CATCTCCAGCAGCTCCTGGGGGACATGGCCAGCATCAGCGGGAGGCTGGTTGGGGAAGACAAGTGTT  
 CCCGCCACTGGAGCAGGCATTCCTCCTGGGCCGAGCTTCTTTGTGCTTTGAGACTGATGGAAGAGCGG  
 25 AGGTGCTGGGGCAGAGGCCAGCCAGCCCTTGAGGCAGGAGAATCACCGAGAAGGCGGTTTCCTC  
 ACAGCACAGACAGGAGAACAGACACAGTGGGCACACACAGGCTCCACATCCTCTGCTGCTGCAGGG  
 GGCATGGCACAGCCCATGACCCCTCAAAGCTTCCAGGTAAGGATGCAAAGGAAGGCCTCAGGGAGT  
 GGACCANGCCCTGGCCCTGGGCCCCAAACTTTCCCAAAAGAAGAACCCCAAGCCTGCAGGGGCATN  
 TTGAGAAGCTAGAAGGGGAGCCCCCTNCAANANAAGGCCATGGCTTGACAAAGGGACCGGAACCCAA  
 30 CCAAGGAGCCTNTGNACTTAACCGCCCCGANCATTGCTTTTTTGCCAACTTTTGNNGGCTTTNTTTGNN  
 CCTNCCNCAACNAAGGGNNCANNNTGGGANAAAAACGGGTTTTTTAAATTAACCCCCCCTTCNGNTTT  
 GGGANGGNTTTTTGGGCNCGGNTTGCCNTTCCCTTTGGGGGGCCCNCCGGGGNGGGGGGGCCCTTTTN  
 GGNAANCNAAAATNNNTANTTNGNGGCCCAACANCACAAAAAAGNTTTTNGGAAAACCTTTTC

GCCCTATCNGGAGCTNCACCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGNAN  
 35 AAATTGNANCAATGCATTTCATNGNCCTTCCAGCCCCATCAAACATTGNCATACATGATGAANTTGCG  
 GTTCCCTCCTGGGAATCTGCCTAGTCTTACAAATCCTCACAGGCCTATTCTAGCAATACACTACACAT  
 CCNACACAACAACAGCATTCTCCTCTGTTACCCATATCTGCCGAGACGTGAACTACGGGGTGAATCAT  
 40 CCGATACATACACGCAAACGGAGCTTCAATGTTGTTTATCTGCTTATATNTGCACGTNNGACGAGGCTT  
 ATATTACGGGTCTTACACTTTTCTAGAAACNTGANATANTGGAGTNATCCTTNTGCTCACAGTAATAGC  
 CACAGCATTNATAGGATACGTCCTACCATGAGGACAAATATCATTCTGAGGAGCAACAGTNATCACCA  
 ACCTCTTATCAGCAATCCCATACATCGGCACAAATTTAGTCGAATGAATCTGANGCGGATTCTCAGTA  
 45 GACAAAGCAACCCTTACCCGAGTCTTCGCTTTCCATTTTATNCTTTNCATTTATNATCATAGCAATTGC  
 CATAGTCCACCTACTATTCTCCACGANACANGTCCAAACCCNACANGGAATTTCTCAGACGTA  
 GACAAAAATCCNTTCCACCCCTACTATACCTTTAANGACATCTTAGGGGGCCCTCTTACTAATTCT  
 AGCTCTAATACTACCTAGTNTCTATTTTCGACCCCGACCCTCCTNNGGGANAACCCCATATAACTTNCAC  
 CCCCAGCCCNNTCCGNNTTNCACCAACCCCTTCANATTNAAANCCCGGNGGGGGGNNNNNCTT  
 50 TTTTGNCTTACCGCNATTCTTACGNATCCAATTCCCCCAACCAAACCTTNGGGAAGGANGTTNCNC

GAGCCCATNNGGAGNNGCATNNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
 55 TTTCCGNNCGANGGNNNTNCANGGGGTNTACCTCTGCCCCAGGTNCTGNANCATCNGCTCCTACACC  
 AGTGGGGCCCGNTCCCGCATCAGCTCCTNGNCNTTTCCCGAGTGGGCAGCAGNNGCNCNTNTCGGAN  
 GCGGNTGNNACCCGGCATGAGCATGGCTGGAANCTACNGTGGGGCCCCAGGNTTGGGGGGCATCAC  
 AGCTGTCACCGTGAACCANANCCTGCTGAGCCCCCTCAAGCTGGAGGTGGATCCCAACATCCAGGCCG

TCCGCTCCCAGGAGAAGGAGCNNATCAAGACCCCTCAACAACAAATTTGCCTCCTTCATCGACAAGGTG  
CGGCACCTGGAGCAACAGAACAAGGTTCTGGAGACCAAATTGAACCTCCTTGCAGCNNNNCNAAGA  
NTGNCNCGNNGCNACNTAANACNCCATGTTTNTAGCTACATTNACAACCTCCGTCCGTCGGCAGCTGNAAA  
ACTTTTGGCCCCACGATAANCCTGAAGCTGGAAGTGGAGCTTGGCAACATGCAGGGGCTTGGTGGGAN  
5 TGACTTNCNAGACCANTGTTTCGNCGGNTGAAAAANTNANANGCCGCACANACNATGNAGGANTGAC  
ATTTCCNATCANTCAAGAANGANTGTGGGNCGAAAGNNTTACNTTGAAACNNGGNNAGAANCCTTGA  
TTNCCCNCCCTGGGAAAGGGNTTGGACTTGGATNGAANANCNAANTTTCTTANNAGGCAANCCTGGTT  
TGNAATAAGGNTCNTTCNNTNGTNNNAGNNAGCTCNTCANTAATTTTNTGGAACCCNTNAGNGGGGTC  
TCTTGNTCNTNGGNCAAANNANNTCNGGNAANCTTGGANCCCTCNTGANTGGCNNTCNNTTCTTTGC  
10 TGGGCATNNGGNCCCCNNTTTTGTNANGGNGNATNGNNNAATCCCNAATTTTCGGGTNGAANGCCCT  
NTGGGCNNNTC

GAGCCCATNNGGAGNNGCATNNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
15 TTTCCGNNCGANGGNNNTNCANGGGGTNTACCTCTGCCCCAGGTNCTGNANCATCNGCTCCTACACC  
AGTGGGCCCCGGNTCCCGCATCAGCTCCTNGNCCNTTTCCCGAGTGGGCAGCAGNNGCNCNTNTCGGAN  
GCGGNTGNGNACCGGCATGAGCATGGCTGGAANCTACNGTGGGGCCCCAGGNTTGGGGGGCATCAC  
AGCTGTCACCGTGAACCANANCCTGCTGAGCCCCCTCAAGCTGGAGGTGGATCCCAACATCCAGGCCG  
TCCGCTCCCAGGAGAAGGAGCNNATCAAGACCCCTCAACAACAAATTTGCCTCCTTCATCGACAAGGTG  
20 CGGCACCTGGAGCAACAGAACAAGGTTCTGGAGACCAAATTGAACCTCCTTGCAGCNNNNCNAAGA  
NTGNCNCGNNGCNACNTAANACNCCATGTTTNTAGCTACATTNACAACCTCCGTCCGTCGGCAGCTGNAAA  
ACTTTTGGCCCCACGATAANCCTGAAGCTGGAAGTGGAGCTTGGCAACATGCAGGGGCTTGGTGGGAN  
TGACTTNCNAGACCANTGTTTCGNCGGNTGAAAAANTNANANGCCGCACANACNATGNAGGANTGAC  
ATTTCCNATCANTCAAGAANGANTGTGGGNCGAAAGNNTTACNTTGAAACNNGGNNAGAANCCTTGA  
25 TTNCCCNCCCTGGGAAAGGGNTTGGACTTGGATNGAANANCNAANTTTCTTANNAGGCAANCCTGGTT  
TGNAATAAGGNTCNTTCNNTNGTNNNAGNNAGCTCNTCANTAATTTTNTGGAACCCNTNAGNGGGGTC  
TCTTGNTCNTNGGNCAAANNANNTCNGGNAANCTTGGANCCCTCNTGANTGGCNNTCNNTTCTTTGC  
TGGGCATNNGGNCCCCNNTTTTGTNANGGNGNATNGNNNAATCCCNAATTTTCGGGTNGAANGCCCT  
NTGGGCNNNTC

TTGGAACNGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATACCCGGGCTGCAGGA  
ATNANNAACCANGTNTGCCCCAAGAANCAAAAGCGGAATTGTNCCATNGGTTCANTGGATTCTAATGA  
35 AAACCTCGGCAATGAANTCANGTACAACCTCCAAGAGAAGACACTTGGAGAAGAACCAAGCTGGGTNTA  
TAANAAGCAAGCTGGNTCTATGAGAAGTGGTCTTAACATGTAGACCACTTTTTTAAGCAGCCAGATCA  
CAATGAAAACATCACTACTGTAATGCTTGGCCCATGATGTTATTTCTCACTATCAGTCTGAGACCCAG  
CAATAAATATAANACGTTGCACAAAAAANNTNCTGNGGGGGGNNNGGGGCCCCNNTGTTT  
CNNTTTGGGNTTTTGANAAAAACATTNTTTCANTNTGGGNTTTTNTTTNTAATNNTNNAANTANTT  
TTNNTCNCCTCAATTGTANGGTANCNCCTTTCTCCNTCNNNNNTACCGNTTNCNNTNTNNNNNNCCN  
40 ANTCNNCTCNCGANTTNCNTTTTNCCTTTTCAGANTTAANTNNNNCNCNTGTTTCNNNNAGCCNNNGA  
NTTTTCTNNNTTTCNTTATNTNNTGNGAGAGNNATNTATNANNGTNNATTTCTNNTNCNTGATAGN  
GTTACACNNNNTTTTNTNGCNTNAANCTACCCCCCTTNGANANTNNTTTTTAANNGNNNNNTTNAAC  
NNTTNGCGNTNTATTCNNTATTTGNATTTNCCTNGTGTTCCTTNTTNGTTCGNTCTTANNTTCTCTCT  
TTTTACCNTANANNGTCCNTTNCNAGCNTCTTGCCTTANNTTCTTTCTCGTNTGTNAGCCTNGAC  
45 ACCNCTAGANTTTTTNTNTATTCGNTTGGGGNNTTNCNCTGANACNNTTTANTTTACTCNTTTNTN  
NNTATACTNTTATTCTNGTAGTNTTATCTATTCCNNAATAAATTCNTNAGGAGNTNANACCTACTCATT  
NTANCTANNATGTGTTTTNTNTTACNTCTNCT

AAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGAGA  
50 GGCTCCGCCTGTCCCTAGTCCCACCTCGCAGCGCAGCCGAGGCCGGGCTCCTCCCACTCGTCCAG  
ACACAGAGTGGGAGCAGCGTCACCAAAAAGCGCAAGCTGGAGTCCACCGAGAGCCGGAGCAGCTTCT  
CCCAGCATGCTCGCACCAGCGGGCGCGTGGCCGTGGAGGAGGTGGACGAGGAAGGCAAGTTCGTGCG  
CCTGCGCAACAAGTCCAACGAGGACCAGTCCATGGGCAACTGGCAGATCAAGCGCCAGAATGGAGAT  
55 GACCCCTGCTGACCTACCGCTTCCACCAAGTTCACTCTGAAGGCCGGGCAGGTGGTGACGATCTG  
GGCTGCAGGAGCTGGGGCCACCCACAGCCCCCTACTGACTTGGTGTGGAAGGCTCANAACACCTGGG

GCTGCGGAAACAGCCTGCGTACAGCTCTCATCAACTCCACTGGGGAAGAGGTGGCCATGCGCAAGCTG  
GTGCGCTCAATGATCGTGGTTCGAGGACGACAACGATGAGGATGGAGACGATCTGCTCCATCACCACCA  
CGGNTCCACGACGAGGCAGCAGCTTGGGGGACCCGNCGAGTACAACCTTGGCGCTTCGCGCACCGTGCT  
GTGCGGGAATTTGCGGGCAAGCCCGCAAAACAAGGCGTNTGGCCAACTTCGGGANNNCCAGNGGGCG  
5 GATCCCNCTCTCNNTTGGCTTCTCCGCCTTCAGNGGGCACAGTCACTTCCAAGTTTTCCCAAAGTGTTG  
GGGGGCAAANGGGGGGGGGGAAATTTTNGGGGNANAAGCTTGGTAAACCCGNTTTNTAACTTTTTNG  
GGNAAATTCNAAANCCCCNAAACCCAAAAACCCCCCAANTNGGGTNGGGGTNNNTTNGGGGGG  
GGNNTNAAAACAAANAAAAAN

10 TNNNNCAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
GGAATTCGGCACGAGGCCTTGACGGGCCTCACCAGAGGGGCCACCTACAACATCATAGTGGAGGCAG  
TAAAAGACCAGCAGAGGCAGAAGGTTTCGCGAGGAGGTGGTTACCGTGGGCAATTCTGTTGACCAGGG  
CCTGAGTCAGCCACAGATGACTCCTGCTTCGACCCCTACACGGTCTCCATTATGCCATTGGAGAGG  
15 AGTGGGAGCGATTGTCTGATTCTGGCTTTAAACTCTCGTGCCAGTGCTTAGGCTTTGGCAGTGGTCATT  
TCAGATGCGATTCTAAATGGTGCCATGACAATGGAGTGAAGTACAAGATTGGAGAGAAGTGGGA  
TCGTCAGGGAGAGAATGGCCAGATGATGAGCTGCACGTGTCTTGGAATGGAAAANGAGAATTCAAG  
TGTGATCCTCATGANGCCACATGCTATGACGATGGGAAGACTTACCACGTTGGGAAAAACAGTGGCAGA  
AGGAATATCTTGGTGCCATTTGCTCCTGCACATGCTTTGGANGCCAGCGGGGCTGGCGCTTGTGACACT  
20 GNCGCAAACCTTGGGGCTGAACCCCGGTACCGAAGGCTTCACTTGNCCACTCNTACAACCAGTNTTTC  
CCAGAGATNCCNTCAGAAAACCAACNCTTATGGTCACTGGCCCAATTGAGNGCTTCATTGCCTTTGGA  
TGTNCAGGCTGACCNAAAAAATTTCCCGANAGTATTTTTTCCAAACCCCNAAAAACAAGCGGNGGG  
NTTTTTTGGCCAAGGGNCCTTTCCAAACTGGGNNGGGGTTTCCCNAAANCCCNAGGTTANGGGGGGT  
TCCNTTTTTTAAANCCCNNTTGGNTTTGGGAANAN

25 NNTATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGNNNNN  
NGCNCNNNGTCTGNNNNNATGTGAGAANNNGNCAANCNCTGNCNNGGCTGNTGCCNTGGNCNTGN  
ACNTCNNNACNNNTNAGGNGCNCACACNCTGGCTNGNACNNNCGCANATGNCCTTACNGNNNCTNG  
30 GACCNAAATGNNNGNCANGACCCGNNACTNNAACNGNNTACANGNTGNCATCNGGGNTNTGNANAN  
CCTGNCGGNTTACNNGNTGGCTNNNANNGNTCANGCTTNGCAAGGGNNTNAGATGACTNNTANAGAT  
NCNANGNCNAANCNGACCNNGNTNCTGGCCAGGATTNACNAACGCCCTCTGCTACATGGTNAGTGCT  
GTGNGAGAGNNCNATGAACTNANNTTGTATTNNTGGCCCTNNNNGNTNNNANTNCCACNNACTGGA  
AGNTNATGATNNGNTATGAGAGCNCNNGNGTCTNACCTGCGCNTACTNNATNNNCGNANCCTGAN  
35 CNCNCACGNNTACTTNCNTNGNNTGACNTCGNACTACGGGACNCNTGCTTCANNTACAGACTGNNCCC  
TTGTTNACTGAATCNACCNAGATTGCGANCTGNCNTNNTANNANNTATNCNTANCNTGCNTGGNGAA  
GANANCNTCTTATNACTNGCTGACCTNTTTCCCGNNNANAGTNGCTTGCAATTCNCTGCNACCCTATC  
AAGAATGNTTTGGNTTACNAGNAAAACNACCTCCGCCCCNNNTAAANATNTGGCGCGANCTNGAAN  
CANATTNGTNTTTGCNCCTGTTNNTAAGCCCGNNACNTGGGGGNNATTTATANTGCNTTGCTTTTGAN  
40 NCTTTTNGGCCCTTTTCNTCCNCNAAAAGCCAAAAGCAATTNNGNTTNTGGAAACNTCCTTTGGGNG  
NGCTTGNNTCCCCCNCCNTGGANTNGGNANGTTTTTTGGGNTNNGGTGGGCCNTNTTAAANNTN

45 CCCCCNCTCTCTNTNCCGCTNTNTTTCTGNTTNTTNTNNNTTNNNTTCTCNTCNCCCCTCCNCNCNTN  
TTTCNCTNGCCCNCGCGGCCCTCTNCNTCCNCCNTGNGGCCTCNCNNNNCANATGNNTCNCNNNNNNNT  
TTNAGCCCTTTCAGTGGAGTCGATTNCAAGNGGAGNCCGCTCTAANAACCTAGTGGATCCCCNCGGGN  
CNTCNGTCTCTNGGNTNNGNTNTTTTTTCTNCTCNCNACCTCTNGTNTTTTTNCCCCNCGGGGN  
NCCCTNCTCCTTGNCTTTCTCNCGCCCNCTNTTCCGNGTTTCTCCTCNCNCTGATTCTCGTCNC  
GNCCNTACTCCTGGTTGNCNTTNTTCCCTGTNCNTTCTCTNCTCTTNCNCGCGTNTCNCNGCCCN  
50 CTACCTCCGCCNTNNNNCNCNTTNTTNCNCGNCCNGTTCTGNNCTCTNGNTNCCCTNCCCCCTCN  
TCCTCCNTNCCCTNGTNCNACNCTNCTCNCNCTTANNCTNGCGGCCTCNTCCCCNCCNCCN  
NNCCTCCTCGNTCCCCNCCNCTTTCTCCCGCNCNCTCNCCTCCCGGCNTCCCTTCCCTCCTTNCCT  
CCCTTCCCCNCTGNCNCTNNNCNCCCTNTCNGNCCCCGANANNNNNTTNNCCTCNGGCCCCNCT  
CCNCCNNTTANNNTTCCCCCTCCGTCCACGCGCCTCCTCTCNCGTCGNNCCNNTAGNCNNTTCCGNNC  
55 NGGCCGCCNCCNGTNTNCTCNCNTCCCNANTCNCCTACTNGCGNTCCCGNNTNCNNGNCANTGNNTCN  
NNNTCNCCTCGNGTCCNCTNNNTNNTNGCNCCTTAGTCCCTCTATNTNNNTCNCNNCCCGTCTCCNCTCT

CGNNTTCNATNTTNCGTCTNCGNNGNNNCNCNATGTNCTCTNCGCCGNNTTGTCNAATCNTNCNCCNN  
TCTNTCNCCGTCGTGGCNCNTGCNNNCNCCCTNCAANTCTCCCACTTTTTCCCTTTCCNNCNCCTTCNT  
CNTNTNTTTTCTCCGNNNTTNCCTGTTCTNTCCNCCNNGGTCNCCCTCAGCCTCNCNTNTNCCNCCTT  
CCCNCGGNCCTCNCNCGACTNCCTCCTGNCGCCNCTCCTNTGNTGNNNTCCNCTCNCCTACNCCNCCN  
5 CTNNCCNCCTCNCNNNTACTTCGTATGGNGCTCNCNACTCTCNCNCGCTNCCCTNTTTTCTACNTNCCTC  
NTCTNNNNGCTNTNTTCCGCCGTTNTTNCATTGTANGNGGNCCTCTCTCCGNCNTCNCCTCNTTCNNGT  
CTCNCCTCTCTCTCNCNCNNTTNTNNNNCCTCCCCGCNCGTGCGTTCTCCNTNTNTTNGGCACTCNC  
CGTCTGNTCGCCTCGCTNCNTNGNNTNCNCTCGTNCGGTTTCCCCNCTTCTCTNTTCCNNTNACTGTC  
10 NNCTCCCCACNNACCNTGCNTNCTNCNTNCCCTCCTNTTCCCCCNCGCGTGNNCCTCCCNCCGNGTC  
TNTCNCCTCATCTCNCCTTGGGTCTGACGCNTNCGCTAAGGNNCNCNCCNATNCCNTNGCTCNCCTCCG  
CNCCTTCCNTCCTTNCNGTNNCGTANNGCACCNACATNTTNGTGANCCCNCTCGCTCTGGNCNCCNCCT  
CNCCTGTTNGTGCTCTACTCGNTCCGCCNCTNTNCTCCGTCTCTCCNCGCGC

GCCCTATAGGGAGNCGNATTACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
TTCGGTACGAGGATTNTTGTANCCTGNCGACCNGGANGGGGGGTCNNGGGGGANGCAATTTNGCCCA  
TATNTGATCTACNTCTTACNCCGTTTTTTAAATCCGCATGAGANGTCCCAGTGACACNGNGAGACNA  
TNCACAGNGNTCNTNGNNNGCTNCGAATGACCNCCTGNNNGNNAATCATGACCAGNCCGANGGNTGAT  
15 TTAGAATTGCCTGTGGGACCAGCTAACNNTCNCNGCTGNGGCNNGCNGTAAGTATNTGNNTGNANT  
20 GNCCNAATCTANCTGNNGANGGACTNAACTTTGNNTATTNNNNCATCTGNNACNCGNANCANCAG  
CAGAGANGCNTCTGNGNNTNGAACGACNNCTCTGTGNATATANNNCAAATTNNGGGGGNACANCTGC  
CANANCACTNNNTTGNNTANTTGNGCATANCTGNAAAGGNANTNNNTTCCNCTCTNACCGTNGGGCT  
NTTNAAGNAACNCNTTGNNTNCAGGNGTGCNTGNTCTNTNNGANACNNGANTGNNNTNNNCCNCCNNT  
25 CGNANCNNAATNNNCANGNANGANANGNANGNGGCCAGTNANTNNNGNNTCTTANACCNANTCCCN  
TGCACTACTTCTTAGCNAACCTNCTGGNCTTNAANNNTNCNNTTAAGAANTNTNATNTTCTACTGT  
CAGNNAANTTAATCGTCNNNNNGAATNANTTNTCCNNGGGGCNNGAAANAATTANCTAANTCCNTTA  
NTGNTCCACNTNNAAGGTGCTGNTCCCCCTGNANCGAAAANGANCTTCTNCACTTGGGNNNCGN  
30 CNNTNAAATTNNCAAATAANNTNCNNNTNTNTTNTTCTGNGGTGGTTGTTGTTNTTNNAAACNANTGC  
NNTNTNNNCAGNNGGNAGGATNTCTCCTGNATNACTTCTNAGAGNAANTNATCTNNCNCNANNN  
TTCNTCNAANAGGNTATTANCNGTCTTNCGNTANANTNGNNAANNAGNCCAGNACCCCACTGTNTT  
GTCTGNGNTTNNNNNTATNNNTNGNNNNCCG

NCNNNATCTGGAGCTCCANCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGANT  
35 TCGGCACGAGGGTCTACAAGGTGTCTACCTCTGCCCCAGGTCTTNANCANCNGTTCCTACACNATT  
GGCCCCGGTTCCGNATTAANTTCTTGGNCNTTTNCCNANNGGGCNCNNNACAACCNTTTTNGGGGGGN  
CNNGGCNCNGNNTNAACTNNGGTNGAANCTNCCGGGGGGNCCCANGNTTGGGGGGCNTTACANCTN  
NCACCNNGAACCAAAACCTGNTNANCCCCCTTAAGCTGGANGNGGATNCCAACATTCAAGCCGTCCG  
40 CACCCAGGAGAAGGAGCCGATCAAGACCTTAACACACACAATTTGCCTCNTCTTTATGACAAGGTGC  
GNCACCTGTGAGCACAAAGANANGGTNCTTGNAGACACCATNTGAACCTCNTGNNCCATACATAAAA  
NNTGTGCGGAGCNANATATACANCATGTNTGTGAGNTATATTNANAACCTCTGTGCGGAGNTGNNAAC  
TCTGNNCCACGAGAACTNNAGACTGTAAATGNNGCTTGTNCATGTAGGGGCTGGTGGGGGACTN  
TTCAACAACGATTGNGGATGATGATANNAANCNCANAAATCGNGGAATGAATTTTCTCATCAAANA  
ANGATGTGGATGAAGCTTNTNGANCAACGTGGAACCTGNNGNCCCCCCTGCNANGGGCTGCTTGATG  
45 GAAAANAACCTTTTCCAGCCGCTGNNTTAAAAAGAAAATCCTTNNNAAANNAGCCTNACTNTNTTT  
TCTTACCCCNNGGGTCTTTTCTTGGAACAAACAACCCCANCTTGGANCTTGGATNGGGNTTNTT  
CCNTTGNNGGGNANNGGGCCCCCTTTGAAGGAAAANNNCNCNCCCCCCCCCNGNCTTNTATACCNAA  
GNCNTTTTTCN

NCNNNATCTGGAGCTCCANCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGANT  
50 TCGGCACGAGGGTCTACAAGGTGTCTACCTCTGCCCCAGGTCTTNANCANCNGTTCCTACACNATT  
GGCCCCGGTTCCGNATTAANTTCTTGGNCNTTTNCCNANNGGGCNCNNNACAACCNTTTTNGGGGGGN  
CNNGGCNCNGNNTNAACTNNGGTNGAANCTNCCGGGGGGNCCCANGNTTGGGGGGCNTTACANCTN  
55 NCACCNNGAACCAAAACCTGNTNANCCCCCTTAAGCTGGANGNGGATNCCAACATTCAAGCCGTCCG  
CACCCAGGAGAAGGAGCCGATCAAGACCTTAACACACACAATTTGCCTCNTCTTTATGACAAGGTGC

GNCACCTGTGAGCACAAAGAANANGGTNCTTGNAGACACCATNTGAACTCNTGNNCCATACATAAAA  
 NNTGTGCGGAGCNANATATACANCATGTNTGTGAGNTATATTNANAACCTCTGTGCGGAGNTGNNAACT  
 TCTGNNCCACGAGAACTNNAGACTGTAAAATGNNGCTTGTGNCATGTAGGGGCTGGTGGGGGACTN  
 TTCAACAACGATTGNGGATGATGATANNAANCNCANAAATCGNGGAATGAATTTTTCTCATCAAANA  
 5 ANGATGTGGATGAAGCTTNTNTGANCAACGTGGAAGTGNNGNCCCCCTGCNANGGGCTGCTTGATG  
 GAAAANAACCTTTTTCCAGCCGCTGNNTTAAAAAAGAAAATCCTTNNNAAANNAGCCTNACTNTNTTT  
 TCTTACCCCNNGGGTCTTTTTCTTGGAACAAACAACCCCANCTTGGANCTTGGATNGGGNTTNATT  
 CCNTTGNNGGGNANNGGGCCCCCTTTGAAGGAAAANNNCNCNCCCCCCCCCNGNCTTNATAACCNA  
 GNCNTTTTTCN

TNNNAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGG  
 CCTGACCTGGCAGGCCTGGAGGCGCTGCGGCGGCGGGAGCAGCTCCCCAGCCTGGCCCAGCAGGAGG  
 15 ACCCAGAAAAGGTAAACTTCTGCCTGAAGTTCAACTGTGCCTCGAGACGTGTGCTCCTGAATGCCAG  
 CAGAGCTATGGGAAGGTGAAAGTACACAGCTCGACAACGAGTCCCAGTGAGGCCAGCCTCCGGCCT  
 GACAGCAGAGGAACCAACCAACCTAACATGTCCACAGTGTCAAGGATGCTCCAGGTCCTTGACAGGA  
 CCCTGGCACTTCCACCCAGTTAGATTTTGCTCGACAAAGCCTCTCTTTTATTCTCCAAAGCATCCACG  
 GGCTTACATTTCTCCAGAGGCCTCCCAGGAANAACGCTNGATGGTGTCTCCCTGCTGGCANANAAA  
 AGCCCTGGNAGCTGGTGGCCTGCACCAAGTGCCTGATGTGGGGTGACNTGNCGGCCGGGGGGACCCCC  
 20 GCGGGGGCCTCAAAAAGCTCANAGAAAGGAAGCNCNTTCAAAAGATACCTTCCCCCGCCCCAGC  
 CTGTTGAGCCGNAACACCCAGCCATCTGAAAGCCACAGNTTTGCCAAGGACTTTCCTGTNGGGN  
 GGGNCCCCCTTGGGCTTATTAATAAAAAAGTCGTGCGNGGCAACCCCTTNAAAAAAAGGNG  
 GGCCNAANTTTNGGNAATCCCTTGCTTTTTTTTGGGCTGGACCTTGCCCCCAATTGGGGGTTTTG  
 CCCGGGCAAGGGNCCCCGGGCGGGCCCTTCNNGGGCTTTCNTTTGGGGCACCCCTAATTGGNCCTGG  
 25 GNNNNGGGCCCCCCCCCTAAACAAAAAACANGGCCTTTAAANCCNCGGGGGGACNTTTTAAACNC  
 CCCTTTTGGGGGGGGGGTTNCCNTTTGGCCNTTTTCNCCCA

TTNAAAAACTGGACTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGGTT  
 TGGTGGACTCAGACAGNCCATAGTGGCCTTTTGACCTTGAGCAAGGGGCTCAACCTCTCTGAGCTTCT  
 30 GTCTCTTCTGCAAAGCGGAGCTCTTAATAGTGGTAACCCACAACGGCGAGGAAGCCAGCCAGTTTNTG  
 GGTA AAAACCTTGGCGTNCATTAAAGCTGATTTCTCTCACTGGCCCTGTGAAGCAGGTTTCAATTATTA  
 CTCTACGAGATAGATGGGGAAGCCAAGGCTGANAGAAAGGTTTGGGGCTGGGACCCTAAACACCTGAG  
 TGCAANACTGGCCCCCTCCACCGAGGGAAGTGGGCTGAAGCCTGGCCCAGGCGCACCCCTCCNTGGG  
 35 GAGAGCCTGGGATGCCCTTCAGCCTTAGTGGCTCCTGACTCATGGAGCCCTCAGCCACCCAGGGCCC  
 CAGATGGGGGTCCCCACGAGGGCAGGGAACGGTCCCCGGAGCCTCCANACTATGAANACNAGTTTC  
 TCCGNTNTCTGNNGCGTGATTATCTGGTACCCGAAGCAGTACCAAGNNGGTCCTNATCGNANCCTACG  
 TGGNTTGTGTTNTTCGAANCCCTGGGGGGCAAACACACTTGGTGTGCCTGGCCGTGTGGCNCANCCCC  
 CNTGANGGACGGNCACCAATTACTTTATTGGNAAACCTGGTCCCTGGGTTGACGTGCNTGGNGAACG  
 40 GCCATTTTGCCTTGCCGGNTAACNTTNTTAATAAAAAAATCACNTGGAATCCTTGGGTTTTTTTGGGC  
 CATTGCCCNNTTGGGAANGGGCAATTCCCNATTTTACANGGNCCGGTTTTTTGTTTCCCNNGGGCAA  
 AGGCTTTAANCCCTTAAATTTTNTTTNNCCTTTGGGACCCGGTTGGGNTTTGCCANTTTTGGCCCNCC  
 CTTTTGNTTTTTNAAAAAAACCA

CAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGTTTT  
 TGCCAGCCTCAGACATACTGGTTACATCTGTATTGAACTTTTGACCCTAGAAACCAATGGAGTTATTT  
 ACCACAAATAACGAATATGCCTGAGGTGCATGGGAATATAAGTCTGACTCTGAAGATACATTTT  
 50 TTTTTTTNCTAGGGCCCNANCNTNTAACNNGTAAAAAGNAAAAANCNGTNNNAAANGTNCNTTTT  
 TTNAGTNCNCAANTGGNAACNNTTNGCNGNTNNGGGGNTAAANTTTCTTTGGGCCANTTANCTAT  
 NGGATTNATNTNATNATAANNGGTNATTAAATTTTTTCCNAATTTANCCNGNNTANCNAANCNGGG  
 TTNNCNAANANNGCCCAAATNGTANGGTNGCCNGNTTCANNAAAAANGGGTNTTNGGNANNANTNTTA  
 NAANCCNTNNCAAATTTNANGCNGGANTNNACAACNTCNTCAATTTNTNATAAAAAAATCTTTNGA  
 ACCCAANGGGATNAATTANGGGTTATTAANAATTGGNTTGGANATCNACNNGGGGCAAATTTTTTAAA  
 55 AGGAGNAAATTGGCCTTTATAANGNAAATNGGGGATTTTGGTTNNACANGGGGGTTCCTATAGGTTTA  
 AATTTTCANNCTTTNAAAAAACAAAAGGGTTNNGGGGAAATTGGGNANAAATTTTNAANGGGTACC





5 GCCCTATNNGGAGNNGNATCNCAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCA  
 AAATCAACACCGATGAGATTATGACCTCACTCAAATCAGTCAATGGACAAATAGAAAGCCTCATTAGT  
 CCTGATGGNTCCCGNAAAAACCCTGNACGGAACGTGNAGGGACCTGAAATTCTGNCNTNCTGAACTCCA  
 GANNGGAGAATATTGGGTTGATCCTAACCNAGGGTGCNAATTGGATGCTNTTAAAGNCTACTGGAAC  
 ATGGAAACTGGGGAAACGTGCNTNAGTGCCNNTCCTTTGACTATNCCACANAANAACNGGNGGACNG  
 ATTCTGGTGCTGANAANAACNTGTTTGGTTTGGANAATCCNTGGAGGGTGGNTTTCANTTTANCTAT  
 GGCAATCCTGAACTTCCCGAAGACNTCCTCGATGTCCANCTGGCATTCTCTCCGACTTCTCTCCAGCCGG  
 GCCTCTCAGAACATCACATATCACTGCNCAGAATAGCATTGCNTACATGGATCATGCCAGTGGGGAAT  
 GTAAAGAAAGCCTTGAAGCTGATGGGGTGCANATGAAGGTGAATTCANGGCTGAAGGANATAGCANCA  
 10 TTCACATACACAGTTCTGGAGGATGGTGTGCACAAAAACACACTGNGGAATGGNGGCCAAAAACAGT  
 CCTTTAGTATCNAACACGCANGGCCGGCCAGACTACCCTATTGTAGAATATTTGCACCTATTGAN  
 ATTCGGGGGGGCCNTGATCAAAAAATTTGGGTGGCCGGACCATTNGNCCCCTGGTNTTGCTTTTTTTTT  
 AAACCCAACTTCTTTTCCAAAGNCCCACAAAAAGCCTTCCCCCTNCCATTATNGTTTCCCTTTTT  
 GGTNCTTAAATCCTTGGTNAGNCCNGCTACCAAGTNGNCCCAAACNTTCCANTTTTTTTNTTTTTTCC  
 15 CCNAAAATNTCTTTGGNGGAAAAAA

20 AAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGCCTGCAGGGAAAA  
 AAGAAGGTTCTGTGTGCCAGAAACCCTTAAGAAAAANNCGGANAAATTTNCAGAAANCTNANAAT  
 NANCCNACNGAAAAANAANNTTGNCCCAAANAANNNTNCAAAGGNCAGGGNGNANCNTANTTTNTAA  
 AAANCNTANCTTNNCCCCAGGNATNCCNGCCNANNNNCCNAACNNNAATTNCAATGGNTTNGANGG  
 NNCCAAAAGCCNGTNACTTNTNTNNNCCNCNGAACCNAATTGGCGTTTGGCATTTCNGANNANANG  
 NATNAATGGTGTGANCCCCAAGGGTCNAAAGGGCTGCANCTTCTTTCTTCGNCNGATATTTNCGGGG  
 CCTTTGANNCTCACCACGGCGTNAATTNCATGCTCTGAANNNTGGAGCCCTACANNNNNTGNGGGNN  
 25 CACNNATNTGAAATCTGTGAATGANNTNANTTACACNCGNGGNTCGNCGNAATCTCCACAAAGCGAA  
 TTNCCTGNACACAAANGCATNNATTGCTCNATCTCTTGGGAAANATGGAATCATCTGCNTGGAGGATC  
 TNATNCATGANGACATATNCNCGGGANACGTTTNAAAAAAGCAAACACTTCTTNTGNGCCNTTAAAA  
 NTCTTCTTCNCNACGGGGGGGTGAAGAAAAAAACCCCCCTTTTTTGAAGAGGGGGGANGCTTGCTG  
 CCAGNGGAGAACACCTNAAACNGGCTTTTTTATAAGGANGAACTACNGNGTTTCCNGGAAGATTATTGG  
 30 NNGTCNNGGTGGTTAAACAACCNACCCAAAAAANNTNNGGGGGGGGGCGGGCC  
 CCCNNNNNNNNNTTTTTTNNGGGGGGNNNTNTTTNNNNNNNNNNNNNN

35 AAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGCCTGCAGGGAAAA  
 AAGAAGGTTCTGTGTGCCAGAAACCCTTAAGAAAAANNCGGANAAATTTNCAGAAANCTNANAAT  
 NANCCNACNGAAAAANAANNTTGNCCCAAANAANNNTNCAAAGGNCAGGGNGNANCNTANTTTNTAA  
 AAANCNTANCTTNNCCCCAGGNATNCCNGCCNANNNNCCNAACNNNAATTNCAATGGNTTNGANGG  
 NNCCAAAAGCCNGTNACTTNTNTNNNCCNCNGAACCNAATTGGCGTTTGGCATTTCNGANNANANG  
 NATNAATGGTGTGANCCCCAAGGGTCNAAAGGGCTGCANCTTCTTTCTTCGNCNGATATTTNCGGGG  
 40 CCTTTGANNCTCACCACGGCGTNAATTNCATGCTCTGAANNNTGGAGCCCTACANNNNNTGNGGGNN  
 CACNNATNTGAAATCTGTGAATGANNTNANTTACACNCGNGGNTCGNCGNAATCTCCACAAAGCGAA  
 TTNCCTGNACACAAANGCATNNATTGCTCNATCTCTTGGGAAANATGGAATCATCTGCNTGGAGGATC  
 TNATNCATGANGACATATNCNCGGGANACGTTTNAAAAAAGCAAACACTTCTTNTGNGCCNTTAAAA  
 NTCTTCTTCNCNACGGGGGGGTGAAGAAAAAAACCCCCCTTTTTTGAAGAGGGGGGANGCTTGCTG  
 45 CCAGNGGAGAACACCTNAAACNGGCTTTTTTATAAGGANGAACTACNGNGTTTCCNGGAAGATTATTGG  
 NNGTCNNGGTGGTTAAACAACCNACCCAAAAAANNTNNGGGGGGGGGCGGGCC  
 CCCNNNNNNNNNTTTTTTNNGGGGGGNNNTNTTTNNNNNNNNNNNNNN

50 TTGAANAACNATCTGGAGCTCCACTCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGC  
 AGGANTNNGGNCGAGGCCTTGGTCCAGCGCTCGAGGNTGNTCTGCCTNCTGTTNATNCNTTNTTN  
 TTCTCTACTNGCTGANCGCCNTCGGGGGCAGCTCCGCANCCCGCGCCANGGTCTTCANNNTNANCCN  
 GCANANCTTNGNCNTNGTGGNANACGACGATTGGCTCANNANGGGNTATCGGTGAGCTCATNGGTAA  
 GNNCATCTATGACTTCTTTGCTCTGGNTATCTTAAAGCTGGNCACTGTGCNGGTTGNTGNNGTTGTGGG  
 55 CNCCTCCNATGCCCCATGATTTNGCGACANTCCGCTGCAGGAATCTTGCTCCNTCCTTGGGGNTNCGN  
 NAANANCGAGGAGATAAAGAAGAGTTNGANGANCTCNGANGAATGACCNTGGGCTTTGGNTTGNTT



TNACTAGAATCCCCGCTNCCCTGGGAAATANNACCCCTTTTTNTGTNAAAAAAAAAAAAAAAAAAAA  
 ATTTTGGGGGGGGCCCNNGCCCNNTNCCNCTTTTTNTTTNNNNNAAAAAAAAACCCCTTT  
 CCCNTNNTNCTNCCANCCCGGNANTGNTTTTNCNTNAACACNGGTGTTTNTTTTNGNCGTCNNTT  
 NANNNCCCCCTNTNTANNCCCTNNTTTTTTANNGTTTTCTTTNCCNCCNGNNGTGGGNACCCNTN  
 5 CCNNTNTNTTTNTNCTTGNGGNTTCNCNNGAGGNCCCNANCTGGGGGGGNTNCTCTTCCCGTNCN  
 ANNAANTANCTNNTCTATTNNTNAATTTCTTNNGGGTGTGNTTNGCCNCCCNCAAAATCGTTTNCNG  
 GGGNNNGNTTTTTNTTNAACCCNCNNTTTTTTTGNNNNGGGGGGNGAAAAANANTCCNCCCN  
 NATTATNGNCCCCCNANNNCNCCNCCNTTTTTTTGCANAAACNNTTTTTTNCCNGCTGCCT

10 TTGANCAAGCTGGACTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGN  
 NGGAGCANAGGGNCCCACCGNCGACNNNGAGGGAACCTNNTNACTGGNNCCGTGCTCATCTCAGGA  
 NCANANCCATTNCTTAGNGAGATAATATAGTATCAAAGCAACATGCAACCNANACCTTTTGACATTT  
 AGGGCTAGTTGGTACTTNCANTANACATGTTTGGTGGCTGGTGTCAAANGTCCGNAAAGNATTAGCT  
 15 GCCANGNAGNGGAATGCTTGCTTTTATTAATAATGACTGTANTCTTCCTTGTTNCAGACAAGCTATCAT  
 TGGAAACCTCCTTTTACAGTACAGGGNGNTCAGAAACGTTTTNAGTNCTTTGAAAGCACTATATTTATG  
 TTGCTCCANGGAGTTGATTTTTCTCCAGGTTTAAANAGAATNACAGCTTCTAACTTTTAATTANAANTG  
 NACAAGACAGAAAGCCCCGNGGANAATTAAAGCCAAANAGGATTTTTTATTNTAATTNTNGGGGGG  
 AAAAAANATCCCAAGCNTTGTGGANNTAAGNGTNCNCCCATCCAAAACNNTGTTTCCNNTTGGNTAA  
 20 AAAAAANTCTTCTTGAAGTTTNAACCTTGAATNGCCCNAAACTTGGGTNNGGNNGGGGTGNCN  
 CTTAATTTANGGGGGGGGGGGGGGGGGGTTTGGGGGGGGTTNAAAAATNAAANNNAAGCCNTGN  
 GGGCCNTATTNNCCACNNNGAAATTTACCCGNGNGGTTCCCCCAACCTTTTAGANNGGGCNTTANN  
 NTTGTAAAGGGTTTTTTGCCAAANGGAAAGGGGACCNTCAAAGGCCGGAANCNNTTTTTTTTTTT  
 NTTANGTTAANGGGGAAAANGNGCCCTTTTTGGGGANNANAAACGGGGGNCNCCCAAAAAANGGGG  
 25 GTNTTTTNGGNCNAANATTTNAACCCGGGTNTTGNCCNCTTTTAGGNG

TNNANAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 AATTCGGCACGAGGCTCACTCTNTGGTGGANCTCANACTCGGGAGGCCCTCGTNTNANGGACAGCT  
 30 GCTTCTCCCGGGCTGGGCTTTTCTCCCTGAGCTGCTCAGCTGGAACGAGGACACGGTCTGAGCCAA  
 CGCCAGTGTCTATTTTCCACAAAACGGGCAATGCTGNGAGAGCCATCGGAAGACTGTCCTCTATGGC  
 AATGATCTCAGGGCTCAGTGGCAGGAAATCCTCAANAGGGTCACCAACCNGCCNCTCAATGCATAA  
 AAAACTAGCAATCTGANNATGNCTCCCAAGCTTTCTGAAGNCTGTGCTGAGGAGAANCCCCATGTAA  
 AACCTACTTTCCCANAAACATTTCTGACTTAGAAGTNGGGAAGGGAANGGCTGCTAAAANTGACT  
 35 TGAAAAAATGGAAGGATACCCCNAGCCCTGGAAGTCGTTCTGGGTCAAGGAATGACCCATTCAATT  
 CCNGGGAGGGCCCGGCCACTTTCCANAATGGACTTACGGATGAGGGATGGGGAACCTGGCTTCTTTNA  
 ATCATTAATTGAANGTCTGGCGNGAATGAATGAATGCCCAAGGACNCCCTGGCAAAGNTTGGAAAA  
 CAGGNCTTGGGGNAAACCCCCCTGGCNCAACCNNAACNTTATTCGNGGGAAACCCNTGGGAGGGAAN  
 GGAAAAAGGAAAAANGGGGGANNAAAAAGGNNGGAAGGAAAAAATTGAAACCAANAGCCNNGNG  
 40 GANAAACCAGTTTTTTAAGGGCGTTNTTACCAAAGAACNTTTTTTTTTTNAAGCTCNAAAAAAA  
 AAAAAAAAAAANAACCTCGGGGGGGGGGGGCCCGGNCCCCAAATTTNCCCTTTTNNGGGGNGNNNNNN  
 NNNNNAANANAGCCNNNNAANNNGNNNNNTTNGNNNNAAANTTANCCNNGNNTNNNNNNNANN  
 NNTTTTTTNGNNNTTTNGGGANN

45 TTGGAACCNCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGN  
 TTCCTTATTTNNNAAATNGGNTCTTAAAATAGGTTCACTATCCTTTGNGNAGAATTGAAAACCTGCA  
 AGAATGTTGTTCAATATCATGGAATTTGCACAGTAAGGGAGATTTTCATGTAAGATTTGTTGAAT  
 ANTTGCATTAATTCATAGCCATACTTGATGAATTAAGTCACAGTGGCTGACATTGATTCTGAATAAATT  
 50 GACCTAAATAAGTANGTATTAATGTACTCTNACTAAACTAATTTAGCATATTTGTTCTGTTTTTGAA  
 AGAACAGGAATTGCCCTTTAATACTTGTTTTNAAATTTGAGNACCTAAACCTTCACACGAGTATAGATTC  
 AAATGGNCACATACATTACTTTTATAAAGNCCGTTATTATTGATTTATTTTAACCCCNAACTGAGACA  
 NATNAAATATTGNTNTATTTGAAAAATGTCNTTTCTTTCCATTACTGTCATCTNACATTACCCCATCTT  
 GAGGGGAANGANTCAGCNCTANGGTGNTTNTATGGATGTGAGTATTTCTCATTTTACATAAACTTC  
 55 ACAATTTATACTTCTCCAATCTCTTACCGAACTTTACANANTTTAAAAANNANTCNTTTTANGGCCTAN  
 CNANANNAACTNGNTTTTTNTNTNTGNGANNANCAGNANTTTNTTATTNCCTTATCCCGGCCNTTT





NTGNCCCNTCNTGCCCTTTGGTCCTTGAGGTGNTACTGTGGANNCTGGNCCTGNTGNTNCTCCCNGCCC  
TACTGNANNNNTTGGACANCNAGGTCNTNNCTGNGNNNGCTATNANTNGACTNTCCTGNCNNAACCA  
NATCNAAAGAANGATCACGATGGAGGCCNCNACNANNNGNACTNANGATGCCNCTGAGNGCCGAGAC  
CGTNANCTCNNGGTGGCNCNCCNCTCNTAACCGTNNGCTGNCNGNTNGAAAAACANCCGNAGCCCNNA  
5 ANGGNNTTTTCNAANAACNCTGCCGATNATGACGTGACGNAAGNATGTGCCCTTTGATTGGCNTGAAC  
CGNTNATGTTGCTGGACCCTAANAANGGTTGGATCANGATGCCTNNNGGTTTTNGGAACCTGGCAACC  
CGAGANAACCTTGGATTACNCANNGAANCCATTTTTGACCAATAANAAATGGTTTTTTGGGGNNNNA  
ACNCCAAGGAAAAAAGGCAGGGNTGGTANCCNGNNNTNGNATTAAACCCCTTTTTCCAANTTTAN  
10 GTTTNTTGGGGGGANACGGTTTTCCGAAACTTGGCAAAGGGNNANCGTTTCAAAATTAATTTTTCTTGG  
ACACTNGAANTCCAACCCCGGGCTTTANAAAAANTTTTTACTTTTCTATTTGCAAAAAAAATTTTTT  
TTTTTAAATTGGGCNNAAAAAAAATNGGNANCCNTTCNGGANGGGGGCCTTCTCCCCCAAGGGTTT  
CCCATTNNAATGGGGGNTTTCGGCCCGGGGGNNAANNNCGGTTTTACCTTAAAGGNGNGNACC  
TTNAAAANGGGTNGCCNAAATCCCCCGGGGACCT

15 TNNNNNAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
GGAATTCGGCACGAGGCTTCGCTGGGGTCTGAGCCGAGCCGAGGCCTGGCTGCTCCCGCCGCCACAA  
GCTGCTGTACCCGGGCTCTGCACAGACAGGTAGAGGGCACCGAATTCGGAGCGCCTACAGCCTGGAC  
20 AAGCTGTACCCGGAATCGCGGGGCGCGGACACCGCCTGGAGGGTCCCGGGCGACGCAAAGCAAGGCA  
ACGATGACATTCTGTAGATCGCTTGACGATATCTTACTGTGCGAGCAGTGGTCTGGGGGCCAGAAC  
GTTAACAAAGTGAATCCAAGGCTGAAGTCAGGTTCCACCTGGCAAGCGCCGACTGGATCGCAGAGC  
CCGTGCGGCANAAGATGGCTCTCACGCACAAAAATAAGATCAACAGGGGCGGGAGAGCTGATCCTCAC  
GTCTGAATACAGCCGCTATCAGTTCCGAAACCTGGCAGATTGCCTCCAGAAAATTCGAGACATGATTG  
25 CCGAGGCCAGCCAGCCAGCCACAGAGCCATCCAAAGAAGATGCTGCACTTTAAAACTCAGGATAGA  
AAACATGAATCGCGAAAGGCTCCGAAAAAANAATAAACTTTGCCATCAAAAAACNAGCANGGAGG  
GTCGGTACCGGACTTGAAAGCACCCCTTNGAGCCAGCANAANCCCTTCANGGNCANCCANGTNG  
GCTCGGGACACCCAGGAAAAACGGGNGTCTGTTGCGGNCANCTGGTTCGGNNTTTTACGTNGGGAAC  
CCGTNNNAAANNAAGGNCCNTTCGGGAAAAACCNAAAGGTTTTTAAGGCCCTTGGTCCCCCCCAGGG  
30 NNTTTTTTAAAGGGGNAATNNCCGGGTTTTTNNCCNCCCTTTGGGTAAANCCANGGNCCCGGGNTTA  
AANNGGCCATTAAAAATTNTTTAAACCCCNAAAAAANAAAAAAN

35 TTGANCAACAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GCTTGATTTTTAGAAAGAAAACAGCCAGACTGAATACCACCCAGTGACACCAGNGCAGGTAATAAGCA  
CCACCCATGTTGCACGTCAGGCACACTTAATCCTCTACCCTACCAGGAAGATCGAAGAGTAATTTGTTC  
TGGAAAAATAACTATTATCTTGTCTGTTAGTTTCATGTATCATAAATCCTATAACTGTATGTGGCTTTGCTG  
CTTATTCTTACACTTTTCATCAGGTCCCAAAGACATATTTCTCAGCACTGACAGTGTACAGGTACAGT  
GTATTGTACCTGTAACAATCTTCACAGGTTTTTTGCTGTATATAGGATACGGTCTTTTTGCTGTATATAG  
40 GATACAGTCAGATTATTGATTCTATATACATTTTAATTCAGTTCAAAGGACCTTTTAAGACAGCACCA  
TTTTTCTCACAATATAGACTTTGCTGGTTTCCAGCACATGAAATACATCTCCTGACAGAATATTTTAAT  
GACACATGATAGGGTGTGAGTCAGCTGATCTGTCTGATGATGATATCTCCTGACAGCCTACTTGNTAGCA  
AGTATTCCAGTACTGATTTGAGGCAGCATGTCTTCTGAATGAATATCCTCAGCAGCCTACTTGNTAGCA  
TGTATTTATTGNCATCTGGTTANAAAACAGTGAGCCCCAAGNGATTACCGGNCCTTGNTTCAGTCCCA  
45 CTTATTCAGGAAANGGGAATNCCANAATCATGGATCCCCCAAAAAACCTCGCCCCTTCANNGAAAC  
CGACGGGAATGGGAAATGTGCCCTCCANAAANTTTTTGGGGAAAANGGGCTTGGAATCAAATCAAC  
NTGGNACTGG

50 NNCCNTCTANNTCGTAAAAAATNNTTNNCCCTCNCCNCCNCCCCCAACCGCTCCNCCAACTCATCTT  
ACCNACCTCCCCANNGNNNNNNNNNTNNNGTNTCTACTNCCCTTGAGNNNCAACTGGACTCCACGCGN  
GGGCGNCCGCTCTACAACTAGTGGATCCCNCCNNGCTGCGNGNTAATTCNGACNCGAGGGNTANACATN  
CTGCCTCCCCCTACTCACNTNNCTNTNTAGGCCTTATTACGGACNAANGGTTANTTACTCNCTTTCC  
TNTNTCNTNTCACATCGNNNNACNNTNNNATNTNAAANANTANTNTTTANATACCTNNTNAACTANAA  
TCCATCCNCTTNAATNNTNTNTNGNCAAAATATNCATNNTANACNTANTTGTCTNATGNTTNTNTAA  
55 ATCNNTTTTTACTTNNATNNNCNTNTNAAANNTTTNNTNACNCTACTTNNATGNANTTTTNNANN  
NTTNTNTTANNTTCNTTATATNTTTTTATNTGGNTNTNTTCNNATCNNAACTATATNATNTNTCTTN

NNTANAANTACANAGACANTCNTTCTTATTTACCTACTNTTTTTCTCNCCCATACTNTNANTCTTCCTTC  
 ATNTAANNCTACANCNTNCAAATTTTATCATANNTNNTCTNTNNTNNTCCNGTNTTATCATNNTTN  
 CCNGCTTACNTANCTCTNNCANTNNTCTTATNTTTTNTNANNTTTTNNNCANCTNNGCTACNCCTAAT  
 CTCCCTNTNNTNAAANGNTTCAAACNANNTTNATANTTNATTCCANTATANNCTACTTTNACAANCN  
 5 NNTCCTATTNTNNTNATNTNNTCAATNNTTCTNTTCTATCNNTAATNANANNNNTAACNANCCCN  
 TTNANTTCCATNATTTTNTNAAANNAANNTANNTCAATNGANNATCNCGTTTTTATTCCGTCNNCTNNT  
 TACGNCTANTTCTNNTANANTANNTTNTCTTTTTTCTATNNGTACNNTTNNACTCNCNCTACNTACN  
 CNNTTNTCTGNTCNATCTNTAANATATCTCNCATATACTNTGTNNNACTNNTTCTCNTATCTTATAT  
 TANCTCANTTACNTCACTTCTCAGNNNTTNCATNTATNGTTCCAACNTACTNTNTATNTGATANTCT  
 10 NTNCACTCACANNTCACNNTCTNTCACANTTCATATTATTACAATATACNNCACNNATAACNNNNANTC  
 NCTNNCATNCTTACATTTNTGTTTCNNCNTATNATTCTNNNNCATNNNATNTGAGTNNTTATNTATCTT  
 CNNTANTCTCNCNCGACNTANTNTNNTCTTAACTTTATTNNACTNTNNATATATNTNNTNTCANGATT  
 NACTANNNCNTNTTTTATATATAANGATACTANTTNGTCCATNACTTCNTCTNTATANCTTTACACTN  
 NCTNNCNTCATAACNTNNTNNTTCTTNTCTNTTCTCAATCGNTCCGACNNTCNACCCANCTNTTCACTC  
 15 NNATATCGNCTGACNCTGCANGTTTACTCTNNATCCTCTACC

AAANCTGGAGCTCCCCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCTTTTTTC  
 ACTTTGCTGAGGCCAAGTTCACAGCAGGGGACTTCAGCACCACAGTTATCCAAAATGTAAATAAGGCC  
 20 CAAGTGAAGATTAGAGCAAAGAAAGATAATGTAGCAGGTGTTACATTGCCAGTATTGAACATTATCA  
 TGAAGGAACTGACAGTTATGAACTGACTGGTTTAGCCAGAGGTGGGGAACAGTTGGCTAAACTGAAG  
 AGGAATTATGCCAAAGCAGTGGAACTACTGGTGGAACTGGCTTCACTGCAGACGTCCTTTGTTACTTT  
 GGATGAAGCTATTAAGATAACCAACAGGCGTGTAACGCTATTGAACATGTCATCATTTCCCGGATTG  
 AACGTACCCTTGCTTATATCATCACAGAGCTGGATGAAAGAGAGCGAGAGGAGTTCTACAGATTAAAG  
 25 AAAATACAGGAGAAGAAAAAGATTCTCAAGGAGAAGTCTGATAAGGACTTGGAGCAACGGAGGGCA  
 GCGCGGAGAGGTGATAGAGCCTGCTAATCTCCTGGCTGAAGAGAAGGATGAAGATCTTCTGTTTGAAT  
 AAGCTTTCCTGCTCTGGTTCTTTCAGAAGGCCTAACATGTCAACATTTTAATTATGAGGTGTGTANGGT  
 TTGTTGNATGGGTATTTATTTTGGCTTAAAGAATCCCCCAGTTGNAAAATTTCCCTGAATGTCTGTG  
 TTATGGGATCTACGTTTGCANAAATCATAAATAANCAACAATTTATCCCCCAATGAAANTTTGTAGAA  
 30 CCTGTCCCCAAACCTGTAAAATTTTGCCTGNNNNAAGGNCNCCCTTCTTTNANTTTTACTTCNGNN  
 ACAAGGGGTTTTGNTTTCCTCAANATANAAAAANAAACCCCTTTTNGGAACCANTNNTNCTGGCCNNT  
 TNNTCCCCAANNCCCTTTGNTNCCNCCGGCCCCCN

NCNNNATCTGGAGCTCCACCGCNGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAN  
 CCCNCCNTTCNNACCGAGGNGCCCTNNNNNCCNACGNCNNCCGNNANAANGTGACCCACATNATGT  
 TCNAACTNTCNNTGNCNCAACCGTGTATGTGGANATTGAGCGGAGCTNCCCCTGNACGCCNCTGGA  
 CNCACAACCTGNCNTNGTGCTNNACTNTGGAGANGGCTNACCCACGNNGGGCCCANNCATGAGGGNT  
 ACNNCCTGCCCCACCCATTNTNCGNNTGGACCTGGNTGNNAAGATATCANCGANTACCTCATNAAG  
 40 ANANTGACCGAACAAGGCTNTTACTTCTTGACCNCCGNTGACCCTGACATTGTCCNTATACATCNNNG  
 NGAAACTGTGCTTCGTAGNCATGTACTCTGANAATGATATGGTNACTGNCGNATCTCTNCTCCTCCCTG  
 AAAAAGANCTATGATCTGCCTGATNGGCAAGCGATCACCATCANGAATGANCGTNCNCGCTGCNCTG  
 ANACCTGNTCCAGACCTCNCTCATAGNNATGGNNNTATGNTGNCATACTACGATACCAACCCNACAAC  
 NTAATTCATGANGTGTGAANATNGGCTATACAAANANGNGACGCTCTTATGCTNAACAATCGTANCTT  
 45 CTTNNCNGGGGTACCACCATGGTACCNCATNANCTTTNNTNGTCCGCAATGCCTTNGGGAANANCACG  
 GCCCCGAGGNCNCCGNCNATGANGNATCTNNGNATNATNCCCCCTTCCCGAGCCNCCAAGNTNC  
 TTCTGTGTCNNGAATTTGNTNGGATTGCCATACCNAGGNTCCTTTGNNNCACCTTTCCCNCCAAAN  
 TTGNGGGAACCCCNAAANCAGGAAGTTTCAACGGAAGNCCCGGNCNCCNTTCTTNTNCCNCCCGNT  
 NAATGGGTTTTTTCCCNACCCCCCCCCCTCCCNCC

GCCTATCTGGAGCTNCACCNCNGGNGGGCGGCCGCTCTAGAACTAGGTGGGATCCCCCGGNTGTCAGN  
 ANTTCGGCACGAGGCGACGGCGGCAGCGGGCGNAACGGGACTGGAGGNACCANCGGAANGNAGGNG  
 GNTNCTGCAGCCGNCNCCNANGNANGNCCTCNGAAGGNNCNGNNANGGTTNAANCCNTTNTTNTTC  
 55 CCNTNNTNTTTNTAACNNTNTAAANCNNTGGANTNCCNTNCCCCNCCNNGAAGGGCNGGCNANNCCA  
 GNGAATGGGGCNTTNAANNNGGAANCCAGAAGGCCCAAATATTGAAGGGAAGAACNTCTTCAACNGC





GTAAANCCCATGGAATNTGGGGTTGAANCCTAANTTCCCCCCTTACANTTTTACANAACCAAAAAA  
 AAANCCTTTTAAAAAAGNCCCTTTTGGGCNTANATTNCNTNGAATTNCNTNGGGGCANTTTGGNNAG  
 CCAANTGGAAAAGTTTTTTTTTNAAAACCNTTTCCTTAAAAATAAAAAAGNNNNGGGNAAAAATTTTAAAC  
 TTTTAAAGGCNGGGNGGGNCCAAAAAACCTTTTGGNNNNAAAAAACTTTAAAAGGAACCNNTTGG  
 5 TTTTAACTTTGGNAANGGNNNGGGGNGGGNAAAAAAACCCCNNTT

TTNNNNAAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GAATTCGGCACGAGGCTGCAGGCAGGTTGTTGGGTTTCGAGGCCAACGGGGCCAACGGGTCTAAAGC  
 10 AGTTGCAAGAACAGCAAGGAAAAAGGAAGCCTTCTCCTGAGCCAGAAGGTGAAGTTGGGCCTCCTAAG  
 ATCAATGGAGAGGGCCAGCCGTGGCTGTCTACATCCACAGAAGGGCTCAAGATCCCCATTACTCCTAC  
 ATCCTCTTTTGTGTGCGCACCAACCACTGCCTCACCTCATTTCCAACCGGACCACACCGCCTGAAGC  
 GGCCCAAGAACGGCCAGTCCCCCATGGCAGCCCTGATTTTAGTAGCAGACAATGCAGGGGGCAGTCATG  
 CCTCGAAAGATGCCAACAGGTGCACTCCACCACCAGACGGAACAGCAGCAGTCCACCCTCTCCGTCC  
 15 TCTATGAACCAAGAAGGCTGGGCCCCCGAGAGGTGGGGGGCCAGGGGGCAGGCAGTGCCTGGAGGA  
 CTGGAGCCAGTGCACCCCGCCAGCCTCCCGACTCCTTTNTGGCCGCCAGCGCCCCACTGTGCTTGCAC  
 CCTNTGCCATGAACCGGNTGGAGGACACCCACTTTTGTGCAGTGGCCCTTCTGTTCTTCGCACAAGTT  
 NTGCTTTCCCTTGCTCCAAAACAAAGCATTAAACAGCANGGGAATAAGTNGGAGAGGTCTATTGGT  
 CCCAGTGGGGGAAAAAATGCCCTNTTTGNGGGCCTCCAAATGTCCCCCTGGGNCCTTTATTGCAANGG  
 20 GGAAAATTGCAANCCTTTTNTTNGNTTGGANAATTGAAAGTGNAAAAAAANAAAAAANACTTCGG  
 GAANTTTTCGGGTTCAAAAAAANCCCCATGGANTAAATCTTTAACTTAAACTGGGTTNGAATTGGA  
 TTTTATATTTCCCCCTTTTTTTTTTTTTNTNC

TTNNNCAAAACTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 CGAACAGTCCTCACGCCGATCTCTTCTGTTCCACCCGCGCCAGGTGACNCGGAGAGCTGACACC  
 ATGGTTNATNAGNGCTCTACCGGNCGCTGGTCTCCACCAAGTGGNTGNCGGAGTNCGTCCGGGCTGG  
 NAAGGTGGGGCCTGGCCTTCGGGTGCTGGATGCGTNTGTTACTCGCCGGGCACCCGCGAGGCCCGCA  
 AGGAATACCTGGAGCGCCATGTGCCCGGCGCCTCCTTTTTTGACATANAGGAGTGTCTGGGACAAGGCC  
 30 TCGCCTTACGAGGTGATGCTGCCAGCGAGGCGGGCTTCGCCGACTACATGGGCAGCCTGGGCATCAT  
 CAACGACACGCATGTGGTGGTGTACGATGGTGACGACCTGGGCAGCTTCTATGCACCGCGGGTCTGGT  
 GGATGTTCCGTGTGTTTGGCCACCGNACCGNGTCCGTGCTCAATGNTGGCTTTCCGGAAGTGGCTGAA  
 NGAGGGCCACCCCGGTGACATCTGAGCCCTCACGCCCCAAAAGCCAGCCATCTTCAAAAGCCACGCTGA  
 ACCCGCTCCCTTGCTCAAAGACCTACGAACANGTGTGAGAGAACCTCGAATCAAAGAAGTTTCAACT  
 35 TGGTGAATTACGGGGCCANGGGCCGGTACCTTGGCCACACAAGCCCGGAAGCCAAAATGCAATAA  
 GGAAGTTGGACTTCGGGGCCACAATNCCAAGGCTTNGGNCNAACAATGCCCTTTTATTGAACTTTCCTTA  
 ACGGGAGGAATGGGCTTTTGNAAAAAAACCCCAAAGGAACTTCCCGNGNCCATTGTTTCCAAGG  
 GCCAAAAAAGGGNGGANCTTTAANAAGNCCCTTTATTTGGCCACAATTGGCCCCGGGAAG

GGAGCTNACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTTCGGCACG  
 AGGGNCCTCANCTNTTTTCCCGGCGCCGATGCTCTGTAAGAGCCTGCTCCCCATNGTGGTCNAGCAT  
 GTGACGAGCCACNCGCGGNCCCGCCATNAGGTCCAGGCCTGCCTGCTGCTCCAGAAGACCCTGCCAC  
 ACGGGAGCTACGCGTGTGCTTTAAGGACCCAGAGNGGANGCAGCCTGATGGGCCAGACCCTGGGGAA  
 45 NGTACCCGATATCCTGCTGACGCTGCCAGAGGCTGAGACCAATGGCAGGGNACCANAAGGATNTGGN  
 GTCCTTGGAGCTGCTCANCACTCTGTTTCCAGGAATTTCCATCATGATAAGNTGACCATGGACCTGACCGC  
 CGTGCTGGGCGGTGCTGCANAGCCAGCAGCTAANGCTGCAGNANAGGCNACAGCAGGGGGAGCACTC  
 GGGCGGATCCNGCCGNCTTACGACCTATACTGGCNGGCCATGAAGTTTCTCGGAGTCCAGCGCCCCA  
 AGTCAGAGAANGATACCAAGGAGGCCCCNTCAGGCCACACAGNTAGAGCCCCAGTTAGCATGANNCG  
 50 GAAGAAAAAGGGCTTCTTGCCAGAGACCANTAANCGCAAGAANCATNAANCCNTGNAGCCACCACTC  
 CATNGAGGCGGCGGGCGGCTNAANCCCGAAGCCACCAGTGGGGGACCATCCCCCNCCGCGGCCTN  
 GAAGAATAANAANTAANNAAGNNATGAATTAAGAACCATNTTCCCNCCCNCTGTNCCCAAATGA  
 ANTGGGGACANCCTGGTTGCCAANNANTCNAACCCATAANGCCTCCTTGCTGGNNAGCCCCCNNTATC  
 CCCTANCCANATACCCCNATNCCCCCAGAAAAAANACCCAAAANTCTGGCCANNANAAACCNAAG  
 55 NCNNTCCCTTGGCTNANTAAATNCCCCCGGGGNAGCCANTGNTCCTAAAAACNTNNCAAAAAAC  
 CTACCCNAAC







GCAAATATAAGGAAGAAACAATTGAGAAGATGCAAGAATAAAGTCATCTTGTCTACAGCTTTCATTAA  
AAACTGTTAAAAATGAAAAAAAAAAAAAAAAANNTGGGGGGGGNCCNGGNCCCNANTTCNCCNTATA  
GGGAGTCGNNTNACAANN  
NN  
5 NNN  
NN  
NN  
NN  
NN  
NN  
10 NNN  
NN

TNNNNNAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
15 GGAATTCGGCAGGAGGCGCAGTATTTGTCTTCTGTGACTGACTTATTTTCATTCATCATGTCTTCAGTG  
TTGTTGCAAAGAGTAGGATTTCTTTTAAAGGCAGAATAATATTGCATTGTGTATACATTCCATATTC  
ACTCATCTGCTAGTGCACATTTGGGTTGTTTCCATTTCTTGGCTGTGGTGAGTGTGGTGTGGGGAGCCG  
GCGGGAGGCACTCCACCCGTGGCAAAGGTCATGAGGAAGGAGGCTCGACATATGCAAAGGCGGGATC  
20 GAGCCTCAGGAGTCCCCCTGGAAATTTTCGAGCATCTACCCCCATAACCAGAGCCTGCCTATTTCACTA  
CTTTGTGCTCTCACCTACACCTCTGACTTTACGGGGGGCTGTCCCCCACCACCTCTTTCAGAGAAGGAG  
TTAACTTAGAGCTCCAGTTAATAATAATTCCTGGGCATGACAGGAGTGTTCAAAACCTTACCAACTCCTC  
TGAAGGTTCTCTAGCCTGCCTGACAGGCTTGTCCGGCCCCATGTGATTGCTCACAGCCTCCCAACCATG  
AAANGCACGAGATGCGTTAAACCTTNTAAAAACAGGTTCCNTTAAAAAAGTTAANAAAAACCTTTAGT  
25 ATAAGTATGGGGGGGCTGATTAAAAAATTGGATTGGGGGAAGGGTTTTTANTTTGTTGGGNCCAAGGG  
TTAACTGGGTAAATTTTCCAAATNCCCTGGCCNTTCCCCCTTTTNTGGAATTTTTTNNAAAAAAT  
NGGTTTTTACCNTTTGATTNAAAAACCGGTTNAACCTTTTNGGCCAANAAAAATTTTTTNTTTAA  
TNAANCCCTTTANCCCTTTNCCCTTTAANGAAAAGGGACNTTTTTTTTGGGGGGGGGGGTTTTTT  
TNAAAA

TTNANCAANACTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
30 GTTTTTTTTTTTTTTTTTTNAACCNGNNTNGGGGGTTTAANGGTTCNANNATNNNNNATNGTAANNAACCC  
CCCCNAGGGGGGGCCCCNAAAAANTTNNTTTTNTTTTNAAAAACCTTTTTTNGGGNNGNANGGGGGGGCC  
CCCCCTAATAANNCTNGGGTTGGNNNACCCNNNTTNGNNGAANGGGGNAAAAANNGCCCGNANGG  
35 NCCCNCCAANCNAANNGATTCTNTCCNTTNGGGGGNANNAAAAANTTTNNATTTTANNGGNCCGGGG  
GCCNCGNNGNNGNAANCNTTTNGNTTTTNGNNGGAANNCCNGGNNNNNNGGGGGCCCCCNGNA  
NNGNNNTTNGNGGGNGNAAAAANCNTNGGGGNGNNAANNGCNCNTTANNNAGGNANTGGNGGGTN  
GTTTAANAAATNCCANNNGNCNCCTTCCNAANAANCNNGGNNGAAAAAAGGNTTTTTNGGCCANGGAA  
40 ANCCNTNTTNGCCAAGGGGNANANCCTCCCCNTTGGNCANCTGGAACTTTTTTNCNAGGAANAAAAA  
GNAGGTTCCCGGGCCCTTTTTNTTTTAAAAATNCNNGGCCNCNAAACNNAATTTTTTCNTTGTGCCCC  
CCCAAAATTTNCCCNNGGGGNGGGGGCCANAAAAGGAAANANCCCTTTTTTTTGGGGAGAAANTTT  
TTTGAGGNAANTTTGNNAAGGGCCCGGCCCCCCCNNGGGNAAANGGGCCCNNTAATGGGNTTTGNG  
GGGCAATTNCCCTTANCCCCCTTTNAAAAAAATAACATTTGGGGGGGGGNAACNCCNCTNCCCTT  
45 TNAANTNCCANNAAAAAAANACCCCCCTTTTGGGGNGCCCCCAAACCTTNTGGGGGGGGGAGACC  
CCT

CANNANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGTTTT  
50 CATGCAGCAGGCCCTTCTCTGTGTCATTGATGTCCTTACCCCCCTTCTCTCCCTTTGCTGCCTAGTTAAC  
CTTTTGAAATGCAGACCTAATGGCATTGCTTTTTTCTGCCATAGCTTCAGTGGTCCCCGTTATGGAGAG  
TAGAAGTCATAAACTCAAATCCCTACAGGGACTAGAAAGTTAAGGTAAATGGACAAAGTGAGATGG  
ATGTGAGAGGAATGGGAGGAGAGAGGAAGTGCTGTGGCATATTGTCCCGTCTGAAAGGGGCACCTGC  
CACCTGCTTCCACGTGGGAATGCGGGACCCAATTTGACATATCGTCCAATTTCTTAAAGAAGCCGAA  
AATCCAGAAATTTTTATGAGCGGTTTGTGATTTTTTAAATATTGACTTTTAGTTGAGTTTTTAAATGCA  
55 GGTGAGTATTTTGTGAATTGACCTACTTGACGTTTTTGGAAATGTGCCATTTTATCTTGTGATTCTGTTT  
TAAGTGATGCTTCTTCTAAATAACGCTCTTTCCTTCTCTGCCTCAAAACCTGGCAAAATTAGGTTCTT



GANNNAACGTCNNACGTCCNNTATANTCCGGANCANNCNATACGTAANGTNCTAGNAGCGNCANNGT  
 NGTGACTTCTNANTANCANATCNTGANTNNAGGTTANTACNTACNATNNNACNNCNGAGATTANTNN  
 CGTNNNTNNCNNNGNTGATTTNTAACGCANGACCNCATCCACGCATGATCATANTACGNTGGANCN  
 ANTNCGNNTANTNTGNANACNNTCTTGTTTCGTNNGNNNTCNTCATCANGNNCANANNTNCTACGTN  
 5 GANTNGTCCACCTTAGCGANGCENNTTNTAANTNTANNNCAGATCCGNCCTCACCACNGTANTGNCTNG  
 NTNANNTNATCGNCGCTCCCGCANNACTANCTACNNTAGGAATANNACNTNNNTNNNTNATNGNTC  
 GCACGTAGNANANACNTNNNCANNNTAGNGCGGTAGTNAGNGGTCCGCNCTGTACGTNTATATCNCC  
 NACNNNATGTCTGTGCGCANACCGGNTTACGNCNACACGNTNGGNGATGATAATNGATNGATCGCT  
 CGACCGNNGGTNATGNNNNNTTGCANNGAANNNGCAGTCGTANGCTACANAANNTNTNNANNAT  
 10 AATAAANAAANACAGGGNATGNNANTATNTATGATATGGGANGNGTNTTCTGNTTGANATNGNTNT  
 NNACNGNTNTNTAATGGATGGANACGANGATANGNNNTNTNTCNTTATGGNTGTANNNTATNCCA  
 GTNCGCGNACNCNATGNGTAANGATGCNCANGCAACGAAGTNACNTNNTNAGGNGGACNTGNATGC  
 GG

GGGGNNGNGNACNAAATNTTAATTNNATNTTNNNNNTNNNNCCCNCNCNCTCNCNNANTATNTTTATT  
 GTGGAGGNGGGNCNGACCTCTACNNNGGGGGNGNGTGNATAGTTACCNAACATATTNTATCCATTAG  
 GAGCTCTATANTNNTTNTNGNCNCAATTTCTTNTANTGTNCANNNAGGGGNCNCNGTTANTNNCCNN  
 NNNNCTNTTTTTNACTTATATNTTCCATAANTCNGANTNANTTTNAGNGGNTTNTTATNCCGNTTAGCT  
 20 CANAGTGNCNTCTGNAGNTCNTTNCNTTAAATGANGCCNGTCANNTNTATTANAANATNTGNGTG  
 CNNNNNCAAANCAGNANGNTGANNTNGGNGCGTNATTTTGATNNANTNNCTATGTGCGANTTACNNGA  
 NGCTGACNTNGAGNANNANNGGNCANAGNNNATCNCGGCCNANNACACANTTGACAGTANTGNN  
 TNNGNGTAAANNAGATGANNNCGCNTGAGNNTGTNTTNCNCTNCGNAANNCCNCNCTCGANNATA  
 CNCGTANTNGAGNTTGACTGNNNGNGAGTANGGANANGNCANNNNNCGATGATNNNGNNNNNNNT  
 25 NNGCAGGTCCGAANNNCNANAATANNCCNNGAGTNNNNNTACNGAGNNNNNGNATAGCNTNNNGTT  
 NCNNTCCNGTTANNNAATNTTNNNCNCGNNANGNGNTANNCGCGNTGTANNNNANNNNTGGAANNNA  
 CGAGANACCGNNAGATATNNATNACCNNTNNATNNCNANANAGGTCCANCTANTNNCNTTCGNNGTNA  
 TCTNTCNTNNNCGNNNGNATCNCGAGGNANNNCCAACNTNACNNACGNNNNNNCGGTCCNCAATNNC  
 NTGNNCTATGTNCTACACNGGTCTCCTCNCNTNTGTNNACCNTATAAGNTGTCTACGNGTAANACT  
 30 GANNNAACGTCNNACGTCCNNTATANTCCGGANCANNCNATACGTAANGTNCTAGNAGCGNCANNGT  
 NGTGACTTCTNANTANCANATCNTGANTNNAGGTTANTACNTACNATNNNACNNCNGAGATTANTNN  
 CGTNNNTNNCNNNGNTGATTTNTAACGCANGACCNCATCCACGCATGATCATANTACGNTGGANCN  
 ANTNCGNNTANTNTGNANACNNTCTTGTTTCGTNNGNNNTCNTCATCANGNNCANANNTNCTACGTN  
 GANTNGTCCACCTTAGCGANGCENNTTNTAANTNTANNNCAGATCCGNCCTCACCACNGTANTGNCTNG  
 35 NTNANNTNATCGNCGCTCCCGCANNACTANCTACNNTAGGAATANNACNTNNNTNNNTNATNGNTC  
 GCACGTAGNANANACNTNNNCANNNTAGNGCGGTAGTNAGNGGTCCGCNCTGTACGTNTATATCNCC  
 NACNNNATGTCTGTGCGCANACCGGNTTACGNCNACACGNTNGGNGATGATAATNGATNGATCGCT  
 CGACCGNNGGTNATGNNNNNTTGCANNGAANNNGCAGTCGTANGCTACANAANNTNTNNANNAT  
 AATAAANAAANACAGGGNATGNNANTATNTATGATATGGGANGNGTNTTCTGNTTGANATNGNTNT  
 40 NNACNGNTNTNTAATGGATGGANACGANGATANGNNNTNTNTCNTTATGGNTGTANNNTATNCCA  
 GTNCGCGNACNCNATGNGTAANGATGCNCANGCAACGAAGTNACNTNNTNAGGNGGACNTGNATGC  
 GG

TTNANAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
 ATTCGGCACGAGGCNANCNNNNAGANNNNANANNTGACCNNGGATCANACCNATNANTTGAAGGN  
 GNNCTTCCAGCTGNCNTACCGACCGGGGGANGNATNGATCCTGTACAGATANNGTGGNCATGAGATT  
 AGGGCCCTGTTCCAANCCTNNCCAAATGTTACGGTNNNCANTGNCTTGCGNAACCCCCCATNNACGA  
 ANNNNACGANNAGGTTACTNANCNTTGGGNNCTTGCTNCNCANGNTNNTGACTNNGNGNCATAANAT  
 50 GGANCTNGGCCNNTACAATNNNTGNCCANNCGTCTNAGCGTGTNCNTNAAACNANANGAACGGNCNT  
 TNTACTGGGTTGCTTATTGGCCGGGNCCTNGTNCNTTACANTGGGATGCNATCNTGACAGNGGATCAA  
 TTANATATTCCCNTAGCCTTGAATNAGGACCTTAATTGCCTTGNNCAANTNAAAACAAGCCNCCCC  
 NTANGGGNGGGNAACCGGCTTATGGATTCCGGCCCCATNAACCGGAGGGNGGCCCTTTCTTNTNGGA  
 ATTTTCCGGGGCTTTNGGCCGTTTTTCNTTTTAAGGGCCTTTTTTTTTTCNAAAANNNGGGCCNCCANT  
 55 TCCCTTTTAAANNAGAAAAATNTNCGGGGACCNAANNNGGTAAAAAAAANCCCTTGGGTTCCTCC  
 TGTTNTTGGGGCGGNCNNAACANTTTGGGTNNTTTTTTTTNTTTTTTNGGGGGGGANGCTTGGNACT

TCACCTTTTGGCCCGGCNAAAAGGCCCTGACCCCGGGAACNNTTNTTTTGAANCTNGGACNTTAAAT  
GGGTTTTTTGGGCCCCCCCCCNNTATGGGTTANNCTNGGGNCCNNTTAAANGNANGGGGGCCCCNG  
GGCCCTAAANTTTTTTTTTTTTTTTNNCCCCCCTTTTNAAAAAAANTTTNCCCCCCTTAAAAATTT

5

TTGANAAAACTGGACTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGGATA  
GNNTNATGCCNATNTGANGGNAATATTAACAANGCACGCCNAGGGCACTANAAAGGNCATCATAT  
TGTCAANTTAATNCAGGTTTACAGGACCAANTACGNCACTCTCATTGAACCGAGTCAGCCTGANAAANN  
TATTGTACNCCTNTCCNGNCGTACATNNANNCCATNNCNCGNNNATNACNATACTTATNATTGNCG  
10 NTNATANCCGANNTANCATCGTTNGTNTAGCNAGNNNCTCGTCNTTTATNAAAGNATTCAGGGCAAAT  
NTNAGGAAGACTCACTTGAGAAGATNCNATAATAAAGTTATCTTGTNTNCATNTTTTCATTANNAACT  
NTTANAATGATAANNATTTAANTTTTNTGGGGGGGNTCCCTTTTTCCTTTTTTCCNNTTAACTNNCCG  
TTTAACNCNNNCTACTTCCTTTTNTNTTTTTGTCTTTTNGAGANNTTATTTTTTAATTTGTATTTTTNNC  
TNTAACATTTANCCTCTNTACNTTTTTGNTTTTTNTNNNTTTTTTTTTNTATTTNTNNNTNTNNNTTTTTNT  
15 TTTNTNTTTTTNNNTCNNTTNTNTTTCACATTANTCTTNTTCTTCTNNTTGTNNCTNNNANCAATTTNTTT  
TTTNTTNCNNNNNTNNTCCTTATNTTTTTTANTNTTNTTNNNTCNNTTCTTNNATANANTTTTNTT  
TTTCTTTCTNCTTTTNTAACNTNTACTAATANTTATANTTTTCTNTANNAATTTTCTCTCTCTCTCTCT  
TGTTTTTNTTNNCTATACACNTNTATTTTTATTATTTNTTCTTCTCTNTTANCTCTATNCTCTTTTATTT  
TTTTCTNTNATCCTTTTCATNCTTCTTTTACTNTTCTAAATTCGTATTTATNTCTTGTGANNTNNACG  
20 NTTAATNTTTTTCTTCGNGCNTCCTTATCACNTTNTTCTGTANNTNCANCTTCCTCTCTCT

25

NNCAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGA  
ATTCGNTNNNANGCCTACAAACCNCTCCAACCANNCGCACTGNTACGGNAAAAGCNGCTTATCGTCAT  
ACGCCTTTTNTTACCAGCATAATGNCCACATTNATATTTATCCACTTCGGGNCANGAACTAATTANTTCA  
NACTGGNCACTGGACTAAACCATCCCAANTCTTAAATTAATCCCCTTAAGCNTTAAAAAAGANCTATT  
TTCTTCATNAATATTTAATCCAGTAGCACTAATCCGGTNCATGGATCTAATATAGAAATGTTAATTTG  
NATATATATACCTCAGANCCCCATATTAANCAATTCTTTCAAATATCTACTTCCTAATCCTTAATCTAT  
GCCTAATCCCTGGAACCCGGAANCAACCTTTTTTTCAGGCTTTTATTGGCTGGAAAAGNGGTCGGAAAT  
30 CTTATATTTTTCTCCTATCGGAAGGAGGATNCGGGNCGAAGNGAAGCCAACCCAGGCAGCCCTTCCAG  
GCAATCTTATATTACCGNATTNGGCGACTTGGGTTTATTTTAAGCAATAAGCANGGTTCTTAACCAAT  
CTTCATTACCTGGANACCTTCCACAGGATCTTTATTCTTAAACCCAACGAACCTTCAACCTTACCCTTGG  
ATTGGACTAACANTTAGCTGCCANCCGGAATAATCCCGCCCAATTTGGGCCTCCACCCGNGAACTTTCC  
CTTTTGGCAATAANAAGGGCCCAACTTTCCCGNTTTAAGANNTACTNCATTTCAAGCCCCAAATAANG  
35 GGGAGCCAGGGATTNTTTCCCCACCTAAAACCGGGTTNTTTTCCCCCTCACCGNAAACCCATTTAANT  
TCCCTTCCCAACCTNTTTACCNTTTTGGCTTTNGGGNGCCCNNTTCCCCCCTTTTTTTTCCCGGANNT  
TTGGNCCCNCCCCCCCCAATGGGGCCTTTTAAAAAAAATTTGGGNTTTTTCCCAAAAANANANA  
AAAAA

40

TTNANCAANNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGG  
AATTCGGCACGAGGCACCAAGCCAGGCTTGGACAATGGGNGGGGACATGTTCAACGCCAGGTTCAATC  
GAAACTTGATGAACGTGCGCAGCACCAAGGCTTGGTGACCGCAGCCCCCTCTCACACCTTCAAAATCA  
TTATTATTTCTATCTCACACAGGACTTAGTCAAAGCTTGCCCTCGCCGTGTATGTATTCAATTCATT  
45 TATTCATTCTACAGGCTTTTTTTTTTAAATCAGGGCCAAGNCATTTGNATCTTATTTTTAACCANAGCA  
ATAAAGTNTTTTTTACCACGANAAAAAANNNNGGGGGGGGNGCCNGGACCCNATTTCC  
CCCTTNNNGGNGNNGATNAACNNNCGGGGGGGGCCNGGNCCTATNNCCCTATAANANGNNANN  
AAAANNNNNNNNTNTNNGNANNAACNNNNNNNNNGCATNNTTTTTNTTCTAANNAANGGNNNN  
TNATTNNNNNGNNGNNTATNNCNNTNNCNTTNTTANNNNTTTTTTNNNGNNGNNNNNNNANNANTNN  
50 NANNNNNCNGNCCNNTNNNNNNNNNANNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
GNNNNCNNNNNNCCNNTTNNNNNTTNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
NNNNNNNNNTTNN  
NN  
NN  
55 NNNNN





CCCACCGGTGGCCCANAAAGAACTTGGNNTATTANCNAAATNAACCCTNTNTGANNAAANTACGGCCC  
 NGGTATNGGGTACTNNCNAAGAAGCNTTGACCCNGNCTGGANTTTCCANTTTTTCNGAGGNATGGGCG  
 GGCANAGNGGNCNCGCNCCTGNCCGAATGGGGCCNNTCCNACCTGNCTTTTNCCTTNGGCCCNNGA  
 AGGNCCAACCNANAGGCNTTNCANAAANCTTTANANNTTNCATTTGGNNAGAACNTTTCNCNGTNNC  
 5 TGCNTTGGGGCNTACTNAANNNGTAACTCCNATANAAANGCTCCTTGNTTTCTTTNATAGGCTCNN  
 GNACGNTAGANNTNCNTGAATNNCNTGNNCCCCAGGGGNCANTNNTCCCTGTTTCTCCNTNACANN  
 GGNNTNCNCCTNTCGAATGNGCTGGTNCNNANNTTATCACCCNCGAAACAANCTGCGGCGGCNCCCGA  
 ACAACNNTTGTACCAGTTACATNTAAAATTAATAAATANAATAAATTTCTCCNCCTTTNTCCCANANA  
 ANTNCNTANNTTTTNGTNCNCCCCNNGNANANCACTCCNGNANNCCCNAGAATNCACNNCAANA  
 10 NTTTCCNGATTTTNTAACTAATGNNGGNNNCNACNNCAGGTTNTNANCTCTTNNNANAAAAGTNNNT  
 NTNTNCCCCNATNCCCAANTNGGNGTNTNTCTTTCTCCNCTAATCTNCATATAATTNNTCCCNTT  
 NTTTTNTTNGNAAAATACACTCANGCNTTANATAACNTCCACCTACTTNNNTCTANTACCCNCTNTC  
 NACTTCTNACTCACNCACANGTNGGTNTNTGACGTGGATCTTCCNTCTCNCNNAGNACGTNCTTNTC  
 GTNNNAGAAANATNAATNNTCANCNGNCNAACTACTTGNNCNCNGNTTCTAGTANCTNNTCCTACGA  
 15 CTNNNGGNCNTAGTATTCTNNTNTATGTGCTATNTCCCACCTCNNNANTATGCNTNGCCNTTGAANCA  
 ACNCTNTCTCAATNTNGGNANGGNNNTGTTNCNNTNTCCNTTNTNNTCANGNAATNACTCTANGANAG  
 NNGTATTNCCNNTATCNNNTCTTCTCGNTACNGNNGTTCGGTACGNTNNNANNCTNCACTCGNNANNA  
 TGTCGTACGTCTGATGCANNCCNNGCNCGGTANCATCTNCTTATNTNCNGTTCNCANGATCNANTANT  
 GATTNTCGTATANGNTCNCNACTNNCANGNTNTCTCNTATGAATCNCCTTTCTCTATNTATGCTNCGTN  
 20 CCNAAGANGTNNGCATGTGTNCG

GNCNCNTGNCNNGTTNATNNNTTTTTTTTTNTNTNTTNTNNNCCCTACNANATACTTTTAATTTTAN  
 NTCTTAANGCNTNNTNGGNGCGNTTGNTATGGATTCAANCTNTTNAACCANTGGACTNCACCGGT  
 25 TGGCGGCCGCTCTANACTAGTGGATCCCCGGCCTGCNNGGNAATAACCTGNACGAGGCCCNCTCAGC  
 CCANCGGTGGCCCANAAAGAACTTGGNNTATTANCNAAATAANCCCNTATGGNNNAATTAGNCCCC  
 NNTNGGTACTNNCNAAGAANCNTTACCNGNNGCNCNTTCCANTNTTCNNAGGAATGGGCGGCCN  
 AGAGGNNCGCANNCCTTGNCCTGAATGGGGCCNNTCCNACTGNCCTTTTNTCTTNGCCCNNAAGGNC  
 AACNANNGGCTTNCANAACATTNNANNTNCNATGGNAGAACNTGCNNGNCNGCNCNTNGGCCNTACN  
 30 AACNNGGNAACCNNANAAANGCTCCTGTNTTGCTTTTATAGGCTNNAATCNCNTAATTTNCANAATNNC  
 NNGNCCCCAGGGGNCNNTNNTCCCTGTTTCTCCNTAACANNNGNNTACNCCNTTTCGAATGNGCTGNT  
 NCCGNANTTATCACCCNCGAAACACCTNNCNGNCCCTCGAACANCNNTTGTANGCCNNTTACNTNTAAN  
 ATTNACTAAATANAANACTTCTCCCTCCTTTNTCCCANACNATTNCNTNNTTTTGGTNCNCCCCNNTT  
 GNANANCACTCTGNCNCCNTCCCNAGANTNCACNNAANNNTTCTCCNGATTTTNTAACTAATGNNGG  
 35 NNNCNATNNCNCAGGTTNTTANCTCTTTNNANAAANTCCNTNCTTNTNNCNNNNTNCCCAANTGGNNT  
 NTNCNTCTTNCCTCCCCCTAATCTACCATNTNATNTCTCCCNNTNTCTTNTNTGNTNNTNCACTCA  
 NCNNANATAACNTCCACCTAANNTACNTCTANTACCCNCTGTNCNACTTCNCACTCACNCACAAGTA  
 GTTNTNNGACNTGTATCTTCCCTCTCNCNNAGNACGNNCTTNTCGTNGAGAAAAANNATNNTCANCN  
 CNAACTACTNNGTCNNGNTCTGTACGTAANCTCCTACGACTNNGGNCNTAGTATTCTNNTCNAN  
 40 GTCGTATNTCCCACCTCNTNATTATGCNTNGCNGNTNCANTANCNTNTCTNANTNNNNNGATGGNNT  
 NGTNTCTNTNTCCATTNTNNTNNGNATNNACTCNACGANNGTGTATTNCCTNTATCNCNTCTTCTCG  
 CTACNGNGGTTCTGTCNNTNNGNTCTNCANTCGNNANNTATGTCGTACGTCTNATGCANNCNTNGCNGG  
 NTANCATCTNCTTATNTANNNTNNCATGATCNATNTTTTNTATTNTCGTATNNGCTCNCNACACGCANG  
 NTNTCTCCTATGAATCNCCTTTCTGATNTATGCTNCGTNCCNAAGTAGATNCNATGTNCNCGG  
 45

TTNANNAANNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAG  
 GAATTCGGCACGAGGNAGCGTCAAGATNTGTNACTTCNNCNGGATCANNCCGNANNGTTCAAGGA  
 50 GGNCTTCCNTCTGNTTACCGAACGGGGNATGNCATNATCCTGTNCAGNCNGNGTGGGGATGNGANN  
 NGGNCCCTGGGCCATANTTCCACNANNCCNNGGTGNTCNAAGTNTTGGGGAACCCNAAAAGTANTG  
 AACATTANCNNNAANNACCTGAATTTTGGCNCNTTCCAAACCNTCTTGTAATNTGNGCNANAACTA  
 GGNACAANGCCNCTNNCANGNCTNTGGGCNATGGCNCNCGGTGNTNNGCNAAGGAAGGAACCGGCC  
 TNACNNNGGANNTAAAATCCGCTCGGTGNCNCCNCCNNGGTTANNACATTACCNTTGGACAACCTT  
 AAAGNTCCNNGTNGCTTGGGCCTTAAGGCCCTTTANTGNTNGAANAANTANTAAAACCTNGTCCGN  
 55 TGGGGCCCNAAATNGCNTNANGANTTTTCCAAATGNGCCTNGACACCNTGCCCTTTCTTTGGGGGAAAA  
 TTNGTTTTNTGCCCGACNCTTTTINAGNTTTNTTTGGGACAANNTNTTTTTCCCAAATTTNTTTTTTTT

GGANGAAGNNTTNGCCCNNTNACCNTTCCCCCAAATNAACTTTNGTNTNNTTTGTTTTTTAAAAAAA  
 AAAAAAAAAAAAAAAAAAAAAACCCNGNTTTTGGGGGGNCCCNCTNNNNNNNNNNNNNNNNATTTT  
 NCCNAAAAANCCCANANNNNNNNNNNTNNGNCCCTNNNNNNCNCNCCNTTNTAANGGGGGGGGNCCT  
 NGGGGNCCNCTNNNNNTTTTNTTNGGGGNNNNANANNNNNNTNNGGGGNNNTNGCCCCCNCN  
 TTTTNNNGGGGNCCNNTTTNNNNNNAANTNNNTTTTNNNNCCCNNAATNTTT

NAAAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGGAGAG  
 TCTGAGGCCAACGTGAGGGAAATCTTCGACAAGGCACGCCAAGCTGCCCCCTGTGTACTGTTCTTTGA  
 TGAGCTGGATTTCGATTGCCAAGGCCCGTGGTGGCAACATTGGAGATGGTGGTGGGGCTGCCGACCGAG  
 TCATCAACCAGATCCTGACAGAAATGGATGGCATGTCCACAAAGAAAAATGTATTTATCATTGGCGCT  
 ACTAACCGACCTGACATCATTGATCCTGCCATCCTGCGACCTGGCCGCCTTGATCAGCTCATCTATATC  
 CCGCTTCCCGATGAGAAGTCCCGTGTGGCATTCTCAAGGCCAACCTGCGCAAGTCCCCAGTTGCCAA  
 GGATGTGGATTTAGAGTTCCTGGCTAAAATGACTAATGGCTTCTCTGGAGCTGACTTGACCGAGATTTG  
 CCAACGTGCTTGCAAGTTGGCCATTCTGTAATCGATCGAGAGTGAAATTAGGCGAGAACGGGAGCGG  
 CAAACCAACCCGTCAGCAATGGAAAGTAGAAGANGATGATCCAGTGCCTGAGATCCGCCGAGATCAC  
 TTTGANGAAGCTATGCCCTTTGCCCCGCCGTTCTGTCAAGTATAATGACATCCGGAAAGTATGAAATG  
 GTTTGCTCANACCCCTCAACAAANTCNANGCTTTTGGCAACNTTCANAATTCCCTTTAAGGAAACCAN  
 GGGNGGAGCTGGNCCCCAGTCANGGCAATGGCGNGGCCACCAGGTNGCAATGTGTTCCCNAAAAA  
 TAATGGATGATGANCTGTNTGGNTTAAANGGGGGGGGNCNACCAAGCAANGAACCTGGCCTGGGT  
 TGGACNNTTTTCCCTTGNNGGGGGGGGGGCCCCCCCCCAGGAAGGGAACCCGGCCCTNNCT

AAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGAATTC  
 GGCACGAGGCTNTGAAGAGGTTGGGAAGTGACCACTGGATGTCTGGGCCCTGCCAAGGGGACAGGG  
 AGGGTCAGAGGGAGGCCAGCTGCTTCTGCCCCACCCCTTTCCCCAGGCCCACTGTGCTGCTTTTGTGC  
 CAAGATTAAAGTTAGCCAGTCCCTTCCCGTCTTGTCTGTGTGCTTCCGCCTACCCCTCATCACCGCCAT  
 GCCCTGCCCCACACCTCCCCAAAGAATTGAAATGTCAGCTCAGGATATGGGGCCAATTTATGTGAAT  
 CCAGCATGTCCCTGTGTGCGCCCTAGTGTCCCTTCAACCCGGGCCAGCCAGAGCCCCCCTTGTCGCAAGG  
 CCTCGTCCCTGTGCGCAACTTCTCGAGCACAATCGGGCTTCTCCCATCTCCAGGTGTTCTGCCGCTCTCA  
 ACCAGAGGTGCCTTCTCAACTGGGGCGGGAGTCAAAACCTGCCCCCTCTGTGGGAGGGACGTGGAGC  
 CCCCTCAGCCCTTCACTGAGTCTTTTGAATTTGCTCTCAAGTGCCTTAANCAAAAGGAAAACCTTTGC  
 TTGGTGTATGGNGGAAGGTCCCTTGCCTTAAACCTTCTTCCCCGGCTTTGTNCTTCCCCAAGNGCCTT  
 TCCNTTGGCCTTGCTGGAAACTTGGGGGTTTTCNCTTGTTCCTTCCCAANTCCCCACAAACACTTGGCAAA  
 AAAATTTTTTTATTTTNNNTGNCCAATNGGGGNGGGGGGGTCAAACCCCTTAAACCTTNTTGGGGGCC  
 CTNGGGCCCTTGTTCCTTNNNTTTTGGGGGCCCGCAATTTTTTTTTTGGGGGGGGGGGGNGGGGNAA  
 AAAAAAGGGCCGGNNAAACTTTTNCCTTAAACCTTNTNANNTNAAANGGGGGGNNTTTTTCNNCC  
 CCCNCAANANNTTTTNAAAAAAAAAANCCCCNTTTTNGNTTTTTTTTTTTGGGACNNT

TTTGAANACNCATCTGGAGCTCCNCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTG  
 CAGGTGCAAGTCTTTAATAGATGTCATANCAGTGTTNNAGAACTCACTGATNNGGATGCNAAACAC  
 ANAAGGTNNNTCCCNNNNNNATTCNATAAANTATTCTTNTNTGTCNNNCCGACNNCNCNCTCACACCN  
 TNCAGNATANACTTTTTCTGTNTATCTACACNCCNNGTNCCTATCTTTCAAATTNAAGTNATTANCTA  
 TTATNNNNACCCCNNTCNGTGACCTNANNTGTNTTTCGACAACNCCNCCNCTTNTCANTNCACC  
 ACCATNTTANTCCATTCTTNTGTCNTGNCAATTATNCCNCCNANCCTCTNTGGTTNCTCNNTTANACTCC  
 NNNTTCTNNTNNCNNTCCTNCCNATGTNTCNCNNNTCTNNNTNCTANNTTCCNNNTTGCNCANTCTNT  
 NNTTCCCTTTTATTTTACGTAATNNNNNTTNTNNNTCTTNCATNTCNATCCCTCTTATATNTCNATNACAC  
 TCANNTNCTNTNTTAAACNGCNTNCTNCTGNNNCCTCANCTNNGCTATATTTCTATNANACATTCNCC  
 TANANTNNNATATCCCTAATTCNACNCTNNNTCAAANTCNAGCNCACCNCTCCNNNTTCANACCTTT  
 TCNNANTTTNCNCCCAANNNTNANCTNTNTCTCACCNNNTATNNCNCACCTACNTNTCCNCTTTNCC  
 TTACACCANTTAGANNACTCTNTTNCATNCACAATTANNACNTTCTATCTTCTCTATANANNTNNNNC  
 CTTTTNNCCTCTANATTCCGTGAANCCNCAANANTATTTATNANGAGATNAATTNTCGTGCTAACNCTC  
 ACNNTCTTTATAATCTTANTCNACCTTNTTCTNNTATCNTATNNTTCTCTTTCGCTCTCNTTNTCTC  
 NTCCNTAGNTTATTTTCTCTCTCTTNNNTCAANATCNGNACNGNNTNCATTAATATTCNATTCANTACC



GCCTATAGNGAGTCGTATTACAGTGGNGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCNCG  
 AGGCCTGGGACAGGCCAGTCCCGTTCCCTTCCGCATNCTCGCCACCTNACAGGCACCGAGTTCATGCA  
 AGAACCCGGATGAGGAGCACNTGAANAATTNAANCCAGGTGCCNAGGACGGAANCCCNACCCCAAG  
 5 CNTAANNTAAACCCAAGNACCCNTGNCNNGGCCTNACAACCCCAANNCCAANAACCGCCNCCCTTG  
 GNGGGGGNCCCTTNNNTTNNNNNACCCNACCCCAAAACANAACNANANGGTGNTNAACCGGNANA  
 NACAAATCANGCACACACCAAGCGTATGCAAAANACCGACCTTNATTTGCAAGCCGCNCTTTANAG  
 GGGNGCCTNTGGGGGGGNGGGGGGCACACAAAACGAAAAAACTCCNTGTGCCACCCNAGGCCAAA  
 GGGNTNNCNNGGTGNCTTATNTNTTGNNGGCTTNTGCCNNTGCATTATNCNNCCTGNAGAAGTTTTTGN  
 NCTCCCCACAAGTTGGGAAAAANNTTTNGAANAAAAAANGGGNCGTTTTTTTTTNNAGANGAAAANGGGG  
 10 NCTTTTTTTNTCCNCCACNTNNTNANAATGATGNGNNTTATNCCAACCTTTTTGTNNNTGTCAANTA  
 AAAAAAANTACNTGGTTGGAGGGNATTNACTCCCCNTCNTNAAAANAANNATGNGNCANAGGGTT  
 TTGTTNTTTTNTNCTGCNNCANTGCANAAGNGTNCCCNNTTTTTGANAANNNTCTTTTTTTTTTNA  
 GGGAGGNGGGGCCCTTNNTTNNNGCCAGATTTATNTTAAGATNTTTTGGTCNAAAAAANCTCNG  
 ANNGTGNTGTNTTTTTNTAAATANANNTTTTGGNGNACGNANTTTNNTTNAATNAAATNTNTGTTTTT  
 15 TTTTGTNTAGAAATNATNANTTTTGTNTTNCGCGNCANTTTATTNATANNANANCCAGNGNTGNAAAA  
 NAAAATTNTTNN

GCCTATAGNGAGTCGTATTACAGTGGNGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCNCG  
 20 AGGCCTGGGACAGGCCAGTCCCGTTCCCTTCCGCATNCTCGCCACCTNACAGGCACCGAGTTCATGCA  
 AGAACCCGGATGAGGAGCACNTGAANAATTNAANCCAGGTGCCNAGGACGGAANCCCNACCCCAAG  
 CNTAANNTAAACCCAAGNACCCNTGNCNNGGCCTNACAACCCCAANNCCAANAACCGCCNCCCTTG  
 GNGGGGGNCCCTTNNNTTNNNNNACCCNACCCCAAAACANAACNANANGGTGNTNAACCGGNANA  
 NACAAATCANGCACACACCAAGCGTATGCAAAANACCGACCTTNATTTGCAAGCCGCNCTTTANAG  
 25 GGGNGCCTNTGGGGGGGNGGGGGGCACACAAAACGAAAAAACTCCNTGTGCCACCCNAGGCCAAA  
 GGGNTNNCNNGGTGNCTTATNTNTTGNNGGCTTNTGCCNNTGCATTATNCNNCCTGNAGAAGTTTTTGN  
 NCTCCCCACAAGTTGGGAAAAANNTTTNGAANAAAAAANGGGNCGTTTTTTTTTNNAGANGAAAANGGGG  
 NCTTTTTTTNTCCNCCACNTNNTNANAATGATGNGNNTTATNCCAACCTTTTTGTNNNTGTCAANTA  
 AAAAAAANTACNTGGTTGGAGGGNATTNACTCCCCNTCNTNAAAANAANNATGNGNCANAGGGTT  
 30 TTGTTNTTTTNTNCTGCNNCANTGCANAAGNGTNCCCNNTTTTTGANAANNNTCTTTTTTTTTTNA  
 GGGAGGNGGGGCCCTTNNTTNNNGCCAGATTTATNTTAAGATNTTTTGGTCNAAAAAANCTCNG  
 ANNGTGNTGTNTTTTTNTAAATANANNTTTTGGNGNACGNANTTTNNTTNAATNAAATNTNTGTTTTT  
 TTTTGTNTAGAAATNATNANTTTTGTNTTNCGCGNCANTTTATTNATANNANANCCAGNGNTGNAAAA  
 NAAAATTNTTNN

TTNANCAAANTCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GAATTCGGCACGAGGGATGGTACAATCAAGGAAGTCGTTCTGGATCCAGACACCACTCTTACAGCCT  
 GACGGATCTGAGCCCATCCACCTACTACACAGCCAGGATTCAGGCACTGAACGGGACCCTAAGGAGC  
 40 AAGACAGTCAAGACCNTCTTACCACGAGTGGAGTCTGTACCGATTCCCCAGGGACTGCTCCCAGGC  
 AATGCTGAATGGAGACACGACCTCTGGCGGTACACCATTTATCTGAACAACGACAAGACCCANAAG  
 CAGGAAGTCTTCTGTGACATGACCTCTGACNGGGGTGGATGGATTGNGTTCCTGANACGCAAAAATGG  
 ACGTGANGACTTNTATTCGAACTGGNAAGGCTACCCTTNTTGANTTTGGGACNTNAAAAANAAGTTT  
 TGCNTTGGCTTGGACACTTTGNACCAAAATNCCAGCCAGGGCCATACCAACCTCNGGTGGANCTTGC  
 45 GGAACCCCGGGGAAGNCGGCCAGNCCTTTTANAAAAAAGTTAANGTNGGGAAAAAGCCCGGACCCCC  
 TTNCCGGTTNAAGGNGGANGGGGTCCCANNGGCCCGGGAGGNGACCTCCTTGGCCTTACCCAATNGG  
 NNNAATCCTTTTTCCNCNTTTAAAAAGGGACAANNAATTNGGCCATTAAACCAANNTTGGGCCTTTTCN  
 TTAAANGGGGNCNTTTTTTGNNTCAAAAAANCTGCCCCCGGTTAAACCTGGGNGGGGGAAAAANCNGG  
 GGAAAACCCCCCAANNNGGGGGGTTAACCNNGGTTCCCTTGGGAANGGGGCCCAACNTTTTA  
 50 ATTCCANTTTTNTTTAAAAANAANCTTTAAACCCCNANTTTTTCNAAAACCTTTTAAAGGGGNG  
 GGCCCAAAAANGGGCTTAAANTTTTCCG

NCAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGNGAAAA  
 55 GCCNTGNNATGANGAATGGAANAGAGTGGATTGGGAGCAATTATNCTTTTGNCTGTCAAAATGAGTG  
 CCTTTTTAGGAAATGTGGTTCCCAATTGTTGGTTTCCCTGCCATCGTGTGTTCTAAGGAAAATTATCCAT

GGCTCATTAAAAAAAAGTGCTTTATAGCACTGAGATAAAATTTTACATGGATTAAAGTGATTTTGAG  
TATTTTAATCGNAATTCGTCCAAAATCAATATCACTGTGTATTTCTGAGCATTTTCAAGTCTTTTANTTA  
CATTACAGCAAATTAATAATGATATAATAAATTTAAACAATAGACATTGGCGTGGTCTTTTTCAAAAGT  
ACTTAAGATTTGATTTATGGCTCTTACCCAAGAATCATCATGAAAAATCGATTTGTTCTGTAGCAGAAC  
5 TCAGTAAGCATCTTCTTATTTCAAATGGCAATTTTATTTTAAAGACAGAACCCTTAATCTTGGAATAT  
TTGTTTCTTCAGTAAAGATTTCTGAAATTTCCATTTATTTGGTCTTCTTTCCCCAAACCTAATCATCCAC  
CTCATTCCAGATGTCCTACTTATGTTTTTCAAAAATGTACTTGAAAACTAATTGCCCCATCATGNGGGT  
ATCAAATTAATAAGTGATTCTCTGNGGCCAGTTGTCTTCTGGAACCTGGNNGGTAATGGAAANCCTG  
GATCTGCCAAGAACTTTAAAGGGAAAAGGAGTAACTGGGTTCTACTCCCCATGACCGGGGNCNGGG  
10 ATTCNTTTGGTNGAAAATCAAAATCATAAGTTGGATTCTTAAATAAAGCCCCAGGAATTAANGG  
GGTAAAAATTCAATCTTTTAAATCCCTCCTTNCCAAAGTNAAAA

TTNNNNCAACAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGC  
15 AGGNNANNNGCCNGNATGNAAAAAGGAAAAGAGNNGGANNGAGCAATTAGGCTTNTGNCTGTC  
ANAATGAGNGCCTTTTTAGGAAATGTGGTTCCCAATNGNTGGCTTNTGCCATCGTGTGNTCTAAGGA  
AAATTATCCATGGCTCATTAAAAAAAAGTGCTTTATAGCACTGANATAAAAANNTTACATGGANCAAN  
GGGATTTGGAGTATTCNAATCGCAGTNCGNCCAAAATCAATANCACTGTGTATTTCTGAGCATTTNCA  
AGTCTTTTAGTTNCATNCAGCAAATGAATAGTGATCTAATAAATTAANCAATNNACNTTGGCGTGGN  
20 CTTTTTCAAAGANCTTAANATTGGNTTINATGGCTCTAACCCTAAGAATNATCATGAAAAATCCATTTGT  
TCTGNAGCAGACCTCANTAAGCATCTTNTTATTTCAAANGGCAATTTTATTTTAAAGACAGACCCCTT  
AATCTTGGAATATTNGTTTCTTCAGNAAGNATTCTTGAAATTTCCATTNATNGGCCTTTTTTCCCCAACC  
CTAATCATCCCAACCTCAAATTCANANGTCTACTTAATGTTTTTCAAAAAANGTACTTGAAAACTAA  
TTGGCCACATCATGNGGGNAATNAAAAATAAATAAGGGGATTTCTTNGGGGGCCAGTTGGTNTTTT  
25 GGAACCTTTGNGGGGNNAATGGGAANCCCTGGGATCCTTGCCCCAAAAACCTTTAAANGGGGAAAGG  
GGAGTNAACCNNGGGGTTCNCANCCCCCAAGGACCGGGGGCCNGGGTNTTCTTTGGGNGGAAA  
AATCCAAAACCTTTGGTTGGAATTTCCCCTAAATAAGGCCGGGAGGAATTAACGGGGTNAAAAATC  
CAATCTTTTAAACCCCCCTNCCCAAGGNAAAAAAGCCTAAANGN

TTNNGCACANCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGT  
GCAAGTCTTTTAAATAGATGTCATAACAGTGTTTGGAGAACTCACTGATGAAAAATGTGAAACACAGAAA  
GTATGCAAGGTGGAAGGCCACATATATTCATAATTGTTTAAAGAATGGAGAGACTCCTCAAGCAGGGC  
CTGTTGGGATTGAAGAAGATAATGTAGATGTTGAGGAAAATGAAGATGCTGGAGCCACCTCTCTGCCC  
35 ACTCAGCCACTTCAGCCGTCATCTTCCACATATGACCCAAGCAACATGCCATCGAGCAGCTATACTGG  
AATCCAGATTCCCCCGGTGCCACGCTCCAGTAATACCCAGCAGAAGTGCCTCACAGCACAGGTGT  
AACAAGTAACACTATCCAGCCTACTCCACAGACTATTCCGGCCATTGATCCTGCACTCTTCAGTACAGT  
TTCCAGGGAGATATCCGACTAACACCAGAGGACTTTGCTAGGGCTCAGAAATACTGCAAGTATGCTG  
GCAGTGCTTTGCAGTATGAAGATGTCAGCACTGCAGTGAGAATCTGCAGAAGGCCCTCAAGTTACTG  
40 ACTACAGGCAGAGAATGAAGCCTTTGTCAACATCCATGCATTTTTTGGCTTAAAGAACTAACAGTCCA  
CTACTCTATCTTCAGCCTATCAGGAGCACAGNTTTAAGGAAGAACTTCAGTTNCATTGACTTTTAAACC  
AATGAAAACCTGGGGCTGGGGATCAAAATTCCTATTGAAGTATTCATTAGCAGGCCTCAAACCAGNTTT  
CANTGGGCCATTTAANGGGATCCNGGAAGNCCCTTAAGGGGATAAGCTTNTNTAATGGGGAACCANG  
GNCCCTTTTATTTGGCCNC

GCCTATCTGGAGCTNCACCGCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
CGGCACGAGGCAGCCGCATCCCTGAGACAAGATGGTGAAGGTTCGGAGTGAACGGATTTCGGCCGCATC  
GGGCGCCTGGTCAACAGGGCTGCTTTTAAATCTGGCAAAGTGGACATCGTCGCCATCAATGACCCCTTC  
50 ATTGACCTTCACTACATGGTCTACATGTTCCAGTATGATTCCACCCACGGCAAGTTCAACGGCACAGTC  
AAGGCAGAGAACGGGAAGCTCGTCATCAATGGAAAGGCCATCACCATCTTCCAGGAGCGAGATCCTG  
CCAACATCAAGTGGGGTGATGCTGGTGCTGAGTATGTGGTGGAGTCCACTGGGGTCTTCACTACCATG  
GAGAAGGCTGGGGCTCACTTGAAGGGTGGCGCCAAGAGGGTCATCATCTCTGCACCTTCTGCCGATGC  
CCCCATGTTTGTGATGGGCGTGAACCACGAGAAGTATAACAACACCCTCAAGATTGTGAGCAATGCCT  
55 CCTGCACCACCAACTGCTTGGCCCCCTGGCCAAGGTATCCATGACCACTTTGGCATCGTGGAGGGA  
CTTATGACCACTGTCCACGCCATCACTTGCCACCCANNAAGACTGTGGATGGCCCCCTCCGGGGAAGCT

GTGGCNGTGACGGCCGAAGGGCTTGCCAGAAATATCATTCCTGCTTCTACTGGCGCTTGCAAAGGCC  
 GTGGGCAAGGTCATTTCCTTGAGCTCAACCGGAACTTCACNTGGCATGGGCCTTTCCNGTCCCCACT  
 TCCAACGTGTCTGTTTGGAATNTGAACCTNGCCGCTTGANNAAACCCTGGCCAAGTTTTGAATGA  
 5 AGANCCAANAAAGGNNGGCGAAACCNNGCNGTCNNAAGGGCCCTCTCAAGGGCAATTTCTNAGGCT  
 TNCCCNNGAGGGACCCAGTTNNTNTCCCTNGGAATTTCAANAGAGAGAACCCTTNNTTTTTANCCCT  
 CCG

AAAACTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGTTCTTAA  
 10 TTATCACAGCAAATACTTTGGTCTGATTGTCTGTATCTTGTGACAAGCGATAATGACCCAGTANAATTG  
 CATCCGTTCTGGTATTCTTGNGCGTAAGCGTGGAACAATGGACTGGGGCTCCTCGGGCGTGGTGAGC  
 ATCATCACGTGGCCATCCGGGAAGAACCTTACGTACCTGTAATATTCCACTTGGTGCCACGCTCTATAN  
 AAACCATCAAGANACTGCTCCCCCTTGACAAATATAGGNGGTTTTACTGATATACACGCCATCAAATCG  
 AACACGGGGCCTTTCCAAAAACATCTCTCTCCANGATGTGTACGGAACAAGTTTAATACAGNTTCTGC  
 15 CCCAANCTTTCAAGCAGGCCAAACGCCNTATTTGAGGGTNTCTGGCANANATANANAATCCTCTGCAC  
 ACCTGTGACANCTGCTCTAATGATCTGANGTNCAGGTGCTGTCACACCACCCAACGNAAGACGTACAT  
 CACGACCTCCATTGGCAGANCTTGATATATGAGTCNGACTGCTCTCAAGTTCAGGCTGACACAGNTNG  
 AGCACAGACTTCTGAAACGTGAGCTGCTGTGGAAGTAAGACANGANGTCTGNCATCTTGCTGCATCA  
 TCAGTATCTTCAATGNAGCTGGTTCACACGCCNTCACCATTGGAGACCGGGTATAAAGTAATCTTGA  
 20 ACTCTATATCAGGGACAAGTTGCATANCCCCCTACAANAAAACTTGGATGGGTTNATAAAAAAGCTCCA  
 TTTGGTCTTCNTCNACCGGNTTTTAAGAAAAAATTTTGGANGGGGGGGGGCCCGGTACCCAATTTNGCC  
 CCTTTAGNGGANNANNNNNNNNAAANNN  
 NNN

GCCCTATNTGGAGNTGNATNNCAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
 TCGGCACGAGGCAAATTCCTTGACAGCAGGAACCCACTTAGGTGGCACCAACCTTGANCTTCCAAATGG  
 GAACAAGTACAATCTANCAAAAAGGGAAAAGTGATGGGATTCTANATCATAAATCTGAAGAAGANCGN  
 30 GGGAAAAGCTTCTGGTGGNCGGTTGGGCCATTGGCGNCATTGAAAANCCGGNTNNNGGCAANGGCAT  
 ANTCNTCAAGAATNNTNGNCNANGANCTNGGNTNAAATTTGNTNGTGGCNNTGGAACCNNTTCTANN  
 GNTNGNCGGTTNANTTCGGGAACCTTTACTNACCAAANNCNNGNCNNATTNAAGGANCCAANGNTTN  
 TGGNNGNCACCGATCCCANGGCTNANCANCAACCCCTTACGGAANCCTTTTANNTGAACCTGNCAACC  
 ATTGGCCTGTGCAACANGGACTNTTCTCTGGGCTTCGTGGACATTGGCATTCCGTGCAACAACAANGG  
 AGCGCACTCAGTGGGTCTGATGTGGTGGATGCNCTCCCCGGGGAANTCCTGCGCATGCGTGGGNACCA  
 35 NTTTTCCGAGAGCACNCCGNGGGGANGGATGCNCGGAACTCTANTTNTNCAGAGATATCTTGNGGA  
 GAATTGAAAAAGGNANAAGCNCGGCNCNCANCTTGAGAAAAGCTGTGACCCAAAGGANGAGATTTCA  
 CNGGGGGGAAAAGGACNTGGTTCANNCCTNCANANNTTACAGGTTNGCTCCTACCCTGNNGGNGGG  
 AAAACNNGNTCNTGAAAGNNGTGCAANTTGCTTTCCNNGGCCANTTTANCCAGNNTCCCCACTGGAN  
 NAAACNNGGAGGGCTTCAACCCTTTCNNCTGAANNAATAGGGNNTNGNGNCCCCCCCCACCCGCCCCA  
 40 NGTGNCCCNNGAANTGGGGTNGGAAAACCCCCC

TNNANCTATCTGGAGCTCCANCNCTGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GCTCTGAAGGAAAGCAGAAAAATAGTAGAAGGTGAAATGGGCGAAAAGAGAATGCTCATTAGTAGCA  
 45 GGAGAAACACAGGACANGGATCCCATCTTATTGGGGTTCTCAGAGGACAGCAGGACANTTTTTCAGG  
 ACTAGTAGGTAGGGCAGNGTGANAANCCCNCTNTCCAAAAANANANAGGTAANCCTTACCNTTACN  
 TNTACNGGTTNTGGNGCCCCCAGGNNCAGCCNTTTTTNTANCCCCAAAAAATTAGGGNCCCCAANAA  
 GGGCACNCCCAGGNNCCAAAANGNTGGTATTATANTTAGNAGGGAGGNTGATGGNAAGNACCCAAAT  
 CNTAAAGGCCAGGTCNCCAANTTGAAACCAGGAAAGGGGGAGAGGAGATTAGGGAATCTCTGTGNT  
 50 NGNGCACCCGGCTNTGGTCNCTCTTGTTGGCAGTTTTTTTTTAAAAANCNTTCTCTAGCTCTAGCCCNATA  
 ACNNTGTAANATNTNCCNACCCNCCAGACNGTGAGAGCCCTNCCCAAANTNTTGGGGGGGAGAAGNG  
 NGCTCTTTTACATTTTAAAGGNGCCNGNTNTTGTGANNANNTTCTTCTGAAGACTCTTNANTTCTCTT  
 GTTTTCCCCCANAGGGNCTTNTTGNAAAAAAGGAGGACCCCCCTCCCCCANTATTAACCCCCCA  
 NAAGAAGAACNGGAAGANNCTTCTTNTTCCCCCNCCNCTCTTGCCNTAATTTTCCCCGCTGGTC  
 55 TTGTTTTTAAAAAANNGCCAATTTATTTTTTNNAACGGCCTNGGAAGGGAAGTNCNCCNACGNCC  
 CCTNTTTTTTTAANAAAAAATNTTTTTTCCCCCCCCCCCCCGTTGGGTTCCNTTTTTTTTTAAAGN



5 TNNANCCTATCTGGAGCTCCANCNCNGTGGCGGCCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GCTCTGAAGGAAAGCAGAAAATAGTAGAAGGTGGAAATGGGCGAAAAGAGAATGCTCATTAGTAGCA  
GGAGAAACACAGGACANGGATCCCATCTTATTGGGGTTCTCAGAGGACAGCAGGACANTTTTTCAGG  
ACTAGTAGGTAGGGCAGNGTGANAANCCCNCTCNCCTCCAAAAANANANAGGTAANCCTTACCCNTTACN  
TNTACNGGTTTNTGGNGCCCCCAGGNNCAGCCCNCTTTTNTANTANCCCAAAAAATTAGGGNCCCAANAA  
GGGCACNCCCAGGGNCCAAAANGNTGGTATTATANTTAGNAGGAGGNTGATGGNAAGNACCCAAAT  
10 CNTAAAGGCCAGGTCNCCAANTTGAACCAGGAAAGGGGGAGAGGAGATTAGGGAATCTCTGTGTNT  
NGNGCACCCGGCTNTGGTCNCTCTTGTGGCAGTTTTTTTTTAAAAANCNTTCTCTAGCTCTAGCCCNATA  
ACNNTGTAANATNTNCCNACCCNCCAGACCNCTGAGAGCCCTNCCCAAANTNTTGGGGGGAGAAGNG  
NGCTCTTTTTCACATTTTAAAGGNGCCNGNTNTTGTGANNANNTTCTTCTGAAGACTCTTNANTTCTCTT  
GTTTTCCCCCANAGGGNCTTNTTGNAAAAAAGGAGGACCCCCCTCCCCCANTATTAACCCCCCA  
NAAGAAGAACNGGAAGANNCTTCTTNTTCCCCNCCCNCTTCTGCCNTAATTTTCCCCGCTGGTC  
15 TTGTTTTAAAAAAACNNGCCAATTTATTTTTTNNACGGCCTNGGAAGGGAAGTNCNCCNACGNCC  
CCTNTTTTTTAAANAAAAAAATTTNTTTTCCCCCCCCCCCCCGTTGGGTTCCNTTTTTTTTAAAGN

20 TTGANNAAANTCTGGAGCTCCACCGCGGTGGCGGCCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GAATTCGGNANGAGGCTTNNCNCNTCCNGNNGACCTCGAGGNGGGGNCCCGGNGCCCNNTNNGCATA  
TANTNACTCGNATTACNTGTNNNTCTTTANNGNNTGTNACNTACTAGGGCGAATGGATGAANTGAAAG  
TTGGAGGAAANGANCTATTNGACTTAANANGCTNTTATGTATCENAGCTGCTNTGANTGGANGTGCC  
NATNNTNCGAAGAATTACACCTTTTATGANGGCCCAAAGACATATATNTCANAACTGNNNNTGACA  
25 CAGNCACAGCGCTTCTGGACCTGTTTCAAAAATNTTAGAATATTTGNAATATATANGATNCGGTCTTNT  
CGCTGGNTAAACGATANAGCCAGNTTNGTGGAGTNTGCATANANNAANNTNANNGGCCTCGGCCCN  
AAAANAAANCTNCCNTTTTTTTTTTACNNCCCTTTCNCCCGCTGGCTTCCCGATTTTTANNTNAGG  
NNTGGAANAATAATTTAAATGGCNCCTTTTAANGANTGCCNACAAATTTTGAANGGCTTAGGCCN  
AGTTTTCCCCCTNGGGCANNAACCCCTTNCNTTTNNATTTNCCAGNNCCCTNGNTTNCAGGGGGNCATT  
30 NTCTTTTTTGAAAGNAAANNGCCTTTNNCCCCCTTANATTGGTTTNNCCNTTANTTAATTGGNCCCAT  
NTNNNTTTAAAAAAACCNGGGGNCCCCCATGAANACCNGGCCNTTTGTTTTTAAATCCCCCCTTTTT  
TTNAGGGGAANNGGGGATTTCAAAAAANNNNNNAACCCCCCNNAAAACCCTNTTCCNCCTCCCN  
NTNAAACCNNACCNNNAATTGGTTTTTTTTTNNCCCNNAANAATNTTTTTTTTGNAAAANGGCCCTN  
NGGGCNCNCANTCNACNTTNGNACCTTGGGNCCANNGGGGGAAAAAAACCCCCNTTNTGGNGNN  
35 ACCTNCT

40 NCANNANCTGGAGCTCCACCGCGGTGGCGGCCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAA  
TTCGGCACGAGGCTTNTTGGGGNCTGAGCCGAGCCGAGGCCTGACTGCTCCCGCCGNCACAAGCTGC  
TGTCACNNGGGCTCTGCACAGACAGGTANAGGGCACCNAAATTCGGAGCGCCTACAGCCTGGACAAGC  
TGACATTCCTGTNTATCGCTTGACGATATNTNACTGTTCGGANCAAGTGGTCTGGGGGCCAGAACGTTA  
ACAAANNGAACTCCAAGGCTGAAGTCAGGNTCCACCTGGCAAGCGCCGACTGNATCGCAGAGCCCGT  
GCGGNAGAAGATGGCTCTCACGCACAAAAATAAGATCAACAGGGCGGGAGAGCTGATCCTCACGTCT  
45 GAATACAGCCGCTATCAGTTCCGAAACCTGGCAGATTGCCTNCAGAAAATTCGAGACATGATTGCCGA  
GGCCAGCCAGCCAGCCACAGAGCCATNCAAGAAGATGCTTGCTTCAGAAACTCANGATAGAAAAC  
ATTGAATCGCGAAANGGTTCCGAAAAAAGANAATAAACTTTTGNCATNAAANACGAGCAGGAGGGT  
CGGTACCGGACTTGAAAGCACCCCTTCGAGCCAGCAAAANCCCTTCANGGCCNCCAGGTGGGTTCCG  
GACACCAAGAAAACGGNGTCTGGTCCGGGGCACTTGGTCGNNTTTTACCGTNGGAANCCGTNGNAA  
AAAAGGTCTTTTCGGGAACCNAAGGTTTGTAAAGNCCCTGGGCCNCCCAAGGTNNTTTTAAAGGGGAA  
50 AACCCGNGTTTTTNCANCCTTTCGTTTTNCCATTNGNCCCGGNNTTAANTTGGCAATNAAAAATNTT  
NAACTTCNAAAAAAAAT

55 NCANNANCTGGAGCTCCACCGCGGTGGCGGCCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAA  
TTCGGCACGAGGCTTNTTGGGGNCTGAGCCGAGCCGAGGCCTGACTGCTCCCGCCGNCACAAGCTGC  
TGTCACNNGGGCTCTGCACAGACAGGTANAGGGCACCNAAATTCGGAGCGCCTACAGCCTGGACAAGC



TGTACCCGGAATCGNNGGGCGCGGACACCGCCTGGAGGGTCCCGGGCNACGCAAAGCAAGGCAACGA  
 TGACATTCTGTNTATCGCTTGACGATATNTNACTGTCTGGANCAGTGGTCCTGGGGGCCAGAACGTTA  
 ACAAANNGAACTCCAAGGCTGAAGTCAGGNTCCACCTGGCAAGCGCCGACTGNATCGCAGAGCCCGT  
 GCGGNAGAAGATGGCTCTCACGCACAAAAATAAGATCAACAGGGCGGGAGAGCTGATCCTCACGTCT  
 5 GAATACAGCCGCTATCAGTTCCGAAACCTGGCAGATTGCCTNCAGAAAATTCGAGACATGATTGCCGA  
 GGCCAGCCAGCCAGCCACAGAGCCATNCAAAGAAGATGCTTGCCTTCAGAACTCANGATAGAAAAC  
 ATTGAATCGCGAAANGGTTCCGAAAAAAGANAATAAACTTTTGNCAATTNAANACGAGCAGGAGGGT  
 CGGTACCGGACTTGAAAGCACCCCTTCGAGCCAGCAAAANCCCTTCANGGCCNCCCAGGTGGGTTCG  
 GACACCAAGAAAACGGGNGTCTGGTCCGGGGCACTTGGTCGNNTTTTACCGTNGGAANCCGTNGNAA  
 10 AAAAGGTCTTTTCGGGAACCNAAGGTTTGTAAAGNCCCTGGGCCNCCCAAGGTNNTTTTAAAGGGGAA  
 AACCCGNGTTTTTNCANCCTTTTCGTTTTNCCATTNGNCCCGGNNTTAANTTGGCAATNAAAAATTNTT  
 NAACTTCNAAAAAAAAT

TTNAACAAANCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGN  
 NNNNANGGNGGNGTNCNTNGANCTCGCNCCTGCTGGAGNNGGGGNCNNGGGCNGNNNNNGNNTCNA  
 GTGCNGCGCTNAAGNCGAGCGCCAGATTCCAGTTCTTCAGACAAACAATGGTCCGAGTCTAACGGGAC  
 TGACTACCATAGCAGCTCACCTAGTCAAGCAGGCCAACAAGGAGTATTTGCTGGGGAGCACGGCAGA  
 GGAGAAAGCCGTGGTTCAGCAGTGGTTAGAGTACAGGGTAACGCGAGTGGACGGACACTCCAGTAAA  
 20 GATGACATCCACACGGTCTGAAGGATCTTAATTCATATCTTGAAGATAAAGTCTACCTTACAGGATA  
 TAACTTCACATTAGCAGATATCCTATTATATTATGGGCTTCATCGCTTTATTGTTGACCTGACAGTTCAA  
 GAGAAGGAGAAATATCTTAACGTGTCTCGCGCTGGTTTTGTACATTTCAGCACTGTCCAGGGATTAGGCA  
 GCATCTGTCTAGTGTGTCTTCATCAAGAACAGACTATATACTAATTCCCAGTAGAAGCCACCCGCGCC  
 CCGGCCAGAAGAAGGAATAACCCATGTCCAGTGGGNAAGTGNGGTTTCNGANCCANAGGACTGACGT  
 25 GNACCTGATTTCTNTTCATTTCTNTATTTGGTNGAAANTTGGTAAAAATTTAAAGTACCAACCTCTTGT  
 CCCCAGCATTTTTGGGCTGGGTTTTTTAAANTGGACCANTTTTTGCCAAGTTTTTTTTTTAATGGNAA  
 AAAACTTTTCAACCTGGGTGGGCCAAAAACCTTTGGGGTTGGGAAAATCCAAGGTTTTTTCAAGTTNTT  
 TNTNNGGGTTTTTTNTTGGACCCTTAAGATTGGAAAATTTTNTGGGTNAAANAAAAAAGTTGGCCA

GCCNATNNGGAGNNCGCATNACAGGGGGCGGCCGCTCTANAACCTGTGGATCCCCCGGGCTGCAGGC  
 TTCAGGGCAAAAANGNNNAGTNCCTTCTAGAAAGTACNAGNGCTTGTGCCTGCTCCTGGGGGGAAGGG  
 ACCTTNNCGGATNTGAGGGTTAANCCTTANAGAAATNAGCTGTTGTGTAATACAANGANATCTACAAT  
 GACACCGACAGCCTGTTCCCAACAAGTCTNNGCATCCTCTTCTAAAGAGGACCCTTTTCATCTCTCC  
 35 TAGNAGACCAGGAAGNATNTTCATCCTACCCAGGAGAAANTTGTAGGAGAAGGCGCCTACAGAGGAT  
 GACTTCTAAGCGATGTTTGCTAAGGAGAGAGGGCACNGANAGATGCCATAATACNTTGATTGGNCTGT  
 GAATTTAACCTCCCTACCGTGGTAACCTCACNCNCTGTGCCANNGGCCTTGAGTTGTGTGGAAACAGC  
 CCANAAGGCATTAGNCTACNTGCAGGCTCTTGGGTGCTAAANAGCTTGACCTTCCTGGGCANNGTNTG  
 CCTGNATTGGNCCNGTCGANCGNNANNTGGAGTTATAANGATGTNTGGCTTCCCATTGGTNCCACTTC  
 40 CAAGTCCTGTTTCACACNCCATANATACNTTTAAGCCNNGTGCANNANACNTNCANAANTNTGNNGAT  
 TTCCCTGCGNGCTATCGANTGAAANATTNTATGNNGTCCCGNNTCTNANNANNGCGNCCNTTGCTG  
 GNCCNTTTGNTNGNANGNGGNCCTTCTATCTAAACCTGTAANNGGNAGTCACNCTANNCNNTCTCTTC  
 ATNGTCCTTCNANTGGNGNGNNCCTTNGGAACCTCTCCTTTNGAGNNCNNNNNNANCGTNCCNGGT  
 CNAAAATNANGCCTCGGAGNTAATNTCNTTANTNTNNNANCAACTTTTTTGNNNNNNTAATATTNG  
 45 NATCTTNTGGNNNTCTTNTCNTNCTGNNNTNCCTANTNTNTNANCNNTATTGNGTNTCNCNNNGA  
 ATTGCNCTCNCNANCTTATCTCNTATATNCCNCTNTCTCGNAANNCNCCCTATTAATCTTTNT  
 NACCC

NCAANANCTGGAGCTCCACCGCGGGGGCGGCCGCTCTAGAACTAGTGGAAATCCCCCGGGCTTNA  
 GCCGNTNGCGGAANCCGGTGGGGAGGCGGCTGTCCGGGCTGAGGGCCGCCACAGGGCGCCGGCGAGA  
 TGGAGGTGACGGGGTTGTCCGNCNCCACAGNGAACGTGTTTCATCAGCAGCTNTNTCAACAGNTTTCGT  
 TCCCAAAANCGGNNCAGNCNANCTTNNCCGNACNTAATTNAAANGNNAANNANCANTTINGTGTGGG  
 GCAACCTGNTTCTTGNNGTGTNANANNAGCTGTNTGNACCTGACAACANNNTTTGTGTGAANCTNNATC  
 50 ACNATGATACGCTNCTGGGCTCCTACCACCCAGANGACGACTGGTGCATCCNTNTTNTTGNCCACCAC  
 GGNGCCCCCTTTNTGAGNATGAATGACATATCTAAGNNGGGNNAATATGNAATATCTCNAAAAAGC

NNTTGTANAGAAAGNGAGGAANTANTCNNTCCTTTCCTTAAANGCANCANAANNNGGNTNNGTNTAT  
 TTAAAAAANGGGGCCNCCCAANGANNNGGAAANATCACNTCCCTTTTTTANGGAGGAGGACG  
 GGNCAAGCCATANTNNTTGTGTGCAGCCNTTNGGATGNTANGACCCCTGAGCCAGCCCCNTCCCAT  
 NGGGCNCCGTACTTNTTTTGTNNNTTGNACNNANTTNAACCNNGNNTTTTGGTATTNGGGATTCTG  
 5 NNTTTCNNTTAAACCCCAAACGNAAAAAANCAAAANNCNCTNGGCAATGGTGAAAACTTTTTTTTATT  
 TTTGATNGCNANGNNNGCTNTNNTNNTTCTTTTNNNTTAAAANGGGGNAAANTTNTNGCAATAA  
 AAAANAANAGNNNTTNGNANTTAGANTGNACCNNAANGGGNGAGGGNNNNNTCTTTNNTNNTN  
 CTNNNNNCCCANATTNCCTTCTTCTTNTNNTNCCNGGGGTNCCCCTNNNCCNTTNCNNTTTTNN  
 NTTTTTTACNTNCCNCCCCNCCN

10

GCCCTATNNGGAGCTGCANCNCNGGNGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGG  
 NACNTTNGGTANAGAGATCCTCTTGCAGAGCTANAGGTGCCGGCGNGCNTGNCCCTGGAGANCNTT  
 CTGATTCCCTTCTTNNGGNATGGGGGATCANAAGCNGNTTANACCTTTTAAAGGTNCCGGNTAG  
 15 NACAAANGANCTNGNGCCNGCCCATTTNNAACANCCNTTGNACCTTCNGGACCCCGAGAAACGAAAA  
 GAATTTNTTAAACANCNNCTTGGCTTGGCCTTTTNAATNCNAAGANTNNNGGNACNTNCCAAANCNTT  
 ACNCNCTTCNGGAACNGCNGANCNTTATNGANGNAAACGATCGGNATNTAGAANTAANGGGNCAGA  
 NTGNNGTNTTCCNGAAGCACCCCGCAAAGCGGCCATTCTNAACATGCCGNTGGNGACNACNTCTTN  
 TACTCNNGCTTNTACCACTACACACGAGGCTGAGGGGACGTTTCNGCNCCCCANNGCAACCTGTNAGAN  
 20 AGACGTGTANGATNCCACACAAACAGGTACANGCTGNCACCGCTGTCTCGCTCNCGCCCNCTCTCN  
 GGCCCTGNGATTGNCATCAGATGCCCTGTNTACCACCAACNAANATGTNTGGTGCTNCCCCCACNA  
 AANANAGCNGCCCCNCTGANNNCCCTCNGNNNCGTGGNAGATTTTGCNCCANCNAATATTGGCCC  
 CCNGTTNCAGGANNTTTCNNGANGNGTGTNCCATCNTNGTGNAAGAATGCCCTCCCCACNGNNGGA  
 ACTTNGCCCCCNCCNGGTCCCACTAGTNNCTTGATTGNNGGGNNTTGGTATANCTTTNCCGGNCGAN  
 25 CCTNNAANNATCNNTCCNTCCTNTTTNGTTTCNACNNCCCNCGCANNCCNNGNNGGGCTNTANANG  
 GNTTCTTNNCGGNGGAAGGAAGAAAAAANTNGANTNGCCNTTCTTNAANANANC

NNCAAANCTGGAGCTCCACCGCGGGGGGCGGCCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 ATTNCNNACGAGGCCNCAGTGTGGNACNTNTGGNNTNNAACNNTCGANCAAAAGCNCNGTNGCCTGG  
 TNNCGGANAAANATTNCNGGANTTNAGNCCCCAAGGGGGNCTTACCNTTCCNGGGCCCNCCANCNT  
 TTTNAGGGNTNNNACCCCNNTNGNCNTTCCCTTNCNACNATAGTTNCNTTATTTNCCANNACNGAA  
 ANAAGACNCCGGAATNANAATGAACNTGGGCCCANNNNTGGNTCGNCGGACCNTNCTTNGAAGTAA  
 30 GGTCTGGNCCCGGGGGTNGCTGGGTTTNCATAAACGGGGCCTCTNCATTGGGGGCTCTATCCCGCGA  
 NCCATNTTGTGGNCATTGAGTNCANNGGATAAANTCTCTCTNTCTATNCACGNGGGGGGGGGGGCTC  
 TCTCTGAGAAANCACTCCTGTGNCCCNNTTCTCTNAANAAATGGGGTGGGGCANAATCTCGTGNTT  
 TTTTGCNGCCCCCTCTCCNGTGTGANANGGCNNCATGNCGCTGNTTCTTACTANTAATAATGCNCTTNA  
 ACCNNNATAAAAAANNTTTTAAANCANNNGGGGGGGGCCNNCCCCCNNGGGGGGCNCNNGGGGNN  
 35 NNNNTTNTTNNNNNNNNNNNNNNNTNAAANNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
 NNN  
 NNN  
 40 NNN  
 NNN

NNCAAANCTGGAGCTCCACCGCGGGGGGCGGCCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 ATTNCNNACGAGGCCNCAGTGTGGNACNTNTGGNNTNNAACNNTCGANCAAAAGCNCNGTNGCCTGG  
 TNNCGGANAAANATTNCNGGANTTNAGNCCCCAAGGGGGNCTTACCNTTCCNGGGCCCNCCANCNT  
 TTTNAGGGNTNNNACCCCNNTNGNCNTTCCCTTNCNACNATAGTTNCNTTATTTNCCANNACNGAA  
 ANAAGACNCCGGAATNANAATGAACNTGGGCCCANNNNTGGNTCGNCGGACCNTNCTTNGAAGTAA  
 45 GGTCTGGNCCCGGGGGTNGCTGGGTTTNCATAAACGGGGCCTCTNCATTGGGGGCTCTATCCCGCGA  
 NCCATNTTGTGGNCATTGAGTNCANNGGATAAANTCTCTCTNTCTATNCACGNGGGGGGGGGGGCTC  
 TCTCTGAGAAANCACTCCTGTGNCCCNNTTCTCTNAANAAATGGGGTGGGGCANAATCTCGTGNTT  
 TTTTGCNGCCCCCTCTCCNGTGTGANANGGCNNCATGNCGCTGNTTCTTACTANTAATAATGCNCTTNA  
 ACCNNNATAAAAAANNTTTTAAANCANNNGGGGGGGGCCNNCCCCCNNGGGGGGCNCNNGGGGNN  
 50 NNNNTTNTTNNNNNNNNNNNNNNNTNAAANNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
 NNN  
 NNN  
 55 NNN  
 NNN



TNNNNAAAACTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGAATCCCCGGGCTGCAGGA  
ATTCGGCACGAGGGGNGTTGCTGCTNCTTGCGCTGTGCGCCGANGCGCCCGNNGGCTTTATTNCCAC  
NTAGGANANACCGAANANCGCTGNTTCATCGAAGAAATCCCCGACNAGACCATGGTCATCGGGA  
ACCGNACNCANNTGTGGGANNANCAGANGGAGGNNTTNCTGCCNTCGACCCNCGNNTGNNCATGCA  
CGNGNAGGTGAANGACNNTGAAGGCAANGTGGTGCTNTCNCGGCAGNACGGATCAGAGGGCCGTTN  
ACCTTNNCTTCCCACACTCCTGGAGACCATCAGATTNGCCTGCACTCCAACTCTACCAGGATGGCTNTC  
TTTGCTGGCAGGCAGACTGCTTGTAACCTAGACATCCAGGTTGGGGAGCATACCAACAACTACCCTG  
AGATTGCTNGCCAAGGATAAGACTTGACGNGAGCTACAGCTCCGAGCCCCGCCAGCTGCTTGATCAGGT  
GGACANATCCAGCAAGGAGCTTGATTACCAAGGTATCGTNAAGAGCGCTTCGGTCTGATNAGTGG  
ACANNACACCCANAGGGTCTGNGTGGNCCATNGCTCAAACCTGTTATCCTTCACTGGNAT  
CATGGCCNATCCCNANCTTAAGAACTTCTTTTAAGNCCAAAGCTGGTGNAATGGCCTCACCAACG  
NGAAACCTTTCTCTGGGANCTTAAAGNAATTNGGTAACCTTTCCCCACNCAATATCNTTATCCNCCTGG  
AATTTTTGAGGGAAAAAAAANAATNTTTTCCCCNTTTGGTTNCTTNGGNNCC  
AANGNATTTNNNAATNCNNCCCCNTTTTNAAACTGGT

AAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCTTTGC  
 TCCAGTCAATGTAACTGAAGTGAAGTCTGTAGAAATGCACCATGAAGCATTGAGTGAAGCCCTTC  
 CTGGGGACAATGTGGGCTTTAATGTCAAAACGTGTCTGTCAAAGATGTCCGTCGTGGCAATGTGGCT  
 GGTGACAGCAAAAATGATCCACCCATGGAAGCTGCTGGCTTCACAGCTCAGGTGATTATTTTGAACCA  
 TCCAGGCCAAATCAGTGTGGATATGCACCTGTGCTGGATTGTACACAGCTCACATTGCTTGCAAGTT  
 TGCTGAGCTGAAGGAGAAGATTGATCGTCGTTCTGGGAAAAAGCTGGAAGATGGCCCTAAATTCCTTGA  
 AATCTGGTGACGCTGCCATCGTTGATATGGTTTCTGGCAAGCCCATGTGTGTGCGAGAGCTTCTCTGATT  
 ATCCTCCCCTGGGCGCTTTTGCTGTGCGTGACATGAGACAGACAGTCGCTGTGGGTGTCATCAAAGCA  
 GTGGACAAGAAGGCAGCTGGAGCTGGCAAGGTCACCAAGTCTGCCAGAAAAGCTCAGAAAGGCTAAAT  
 GAATATTATCCCCAATACCTGCCACCCAGTCTTAATCAGTGGTGGAAAGAACGGTCTCAAACTGTT  
 TGCTCAATTGGCCATTAAAGTTTAATAAGTAAAAGACTGGTTAATGATAACAATGCATCGTAAACC  
 TTCAANAAGGAAANGAGAATGGTTTTTGTGGGACCATATGTTTTGTGGGGTGGCAANTTTAAAGTTA  
 TTAGTTTTTTNAAAATCAAGTACCTTTTAAATGAAAACCAACCTGGCCCAAAAAATCTGGNCACAG  
 AAATTTGGAGACCCNTTTAAAAAAAGGTTTAATGANNAAAAAATACTTCGNGGGGGG  
 GCCCGNCCCNATTTGCCCTTTNNTGGNGNNNNNNNNNTNTNANNNC

[illegible]

NAAAATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGAAT  
TCGGCACGAGGTA AACGAATACATTAACGGTGCTAAACACAGAACATTTTAAACCCAGGTCCCGGAC  
ATTCTTAAGCTGGTAACCTTCAAGCCTTCTTACGGGCCTTCTTGNTTACCCNTGAATGGGCCCGNTT  
TNCCTTTGNCGGGGGNNCCCTTCNNCCATTGGCTTGGNGGNACATGGGNGGGAACANTTGATCTGNTNNA  
NCTGGCTTNAANACNCCNTTGGNTTTTTTANAATTTNTNNTTTTGGTNAAAANNTNNTNCCNAN  
NNAAANNTTNGGNTAANTTTANNTTNAAGNATTGGCNCNGCNGGGGGCATNCCTTANNGGNCNAN

ANNGNCNAAGGGAAATAACNNGCACCTNANGGTGGCNANGATNCNTCTAAGGCNAAANGAACAATG  
GTGGGAGANACCNGCCNAATCCACCACNCCCNAACTGGAGATAACNAATCTTATGGTCACNGGGCNG  
TGACNGACACAAANGAGAACTGAGAGGTGTGGGTCTGANAAGNNCANATAACTCTTCTACACTATTA  
CNCCANATTCTTTTACATATTCCCCCTCTCTCACTTTTGCNGAAGCGCANTTTNTTTTTTGCNCTNTN  
5 TNNCNAATNTTGCTCNNAACNNTTTTCAANAGACANNTNNGCCACNNCCCNTCTCTGGNNATCCCCC  
NCACCCTCTGTNGAGNNGGNNTAACCATGTGCTGCGGGGGTGGTTCCCCTCCTAAANTACTCTTTTTTG  
AAGATGCAGCGACANNGGNGGCTTGTTTTTNCCCCAAAANAACCNCANTTCTNNAAGCCGAGGGGC  
CCCAACGTNNGGGNANAAAAACAAAAAANGGCGGGGGGGGNGGAAATGGGGGTNCTNNTTGGGG  
GGGTCCNGGGGNCCTTTTTTTCAACANCNTGGANGGNGNGNNCNCCACCNN

AAAAGTGGAGCTCCACCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGANTNN  
NNCACGNGGCCNACGTGTGGNACCTATGGNATNTACNNTCGANTCAAGAANNACGTNGACTGTANAN  
NGAANACAATGCATGAGTATNNNGCNCCNAGGNTNACTAACCATNCANGGNCCACCANNCTCTCTA  
15 AGGGCTGNNAACCNNTNTNGACTTTCTCTTNTNACAATAGTTCCATTATTTACCATGACTGAGGACAG  
GACACGGNAGTGANANTGAGCTAGNGCCANGACTTGNTTGNCNGGACACTGNNTNGGAGGTACGNTN  
CTGNTNCTGTGGCTGNNNNGTNTNANCANNANNGGGGNCTANCTACATGGGGGCCTCTACCNCGAN  
NCCNTNCTNNGGACTTGANNGTACANGGNANACCNTCTCTTNTCTATTTCATGGGGTGGGGGGTCTCT  
TNTCTGANATAAACCCATTCTGTCACCANTTATTGACTGATNAAANTNGCTGNGANGGCATTCTCTTGA  
20 TGCCTTGNGGCATCCCCCTNNAACCTGTNTNAANNGGACCACATGGCCNTTTGNTATGNACTCGGAAT  
NAAGCNTGNNTATAACCTTTAATAAAATCTTTTTAAACACGGGGGGGGGGGCCCNCCCCCNTGGGGG  
CCCNNTGGGGGCCCNATNNCCCCTATGGGGGNGNNGNNNANCANNNNNNCNNNNNNNNNNNNNNNC  
NNTNCNNNNNNCNNNNNGNNCNNNCNNNNNNNNNNNNNNNCNNNNNNNCNNNNNNNNNNNNNNNC  
CCNNNTNCCNNNTNNNNCCNNNNNNNTNNNNNNNNNNNNNNNTNNANTNNTNNTNNTNNG  
25 NNNNTNCNNNNNCNNNCNNNNNNCCNNNNNNCCNCTANCNNNTNNTNNNNNCNACNTNNNNNNNNCN  
NNNNNTNCCC

AAAAGTGGAGCTCCACCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGANTNN  
NNCACGNGGCCNACGTGTGGNACCTATGGNATNTACNNTCGANTCAAGAANNACGTNGACTGTANAN  
NGAANACAATGCATGAGTATNNNGCNCCNAGGNTNACTAACCATNCANGGNCCACCANNCTCTCTA  
30 AGGGCTGNNAACCNNTNTNGACTTTCTCTTNTNACAATAGTTCCATTATTTACCATGACTGAGGACAG  
GACACGGNAGTGANANTGAGCTAGNGCCANGACTTGNTTGNCNGGACACTGNNTNGGAGGTACGNTN  
CTGNTNCTGTGGCTGNNNNGTNTNANCANNANNGGGGNCTANCTACATGGGGGCCTCTACCNCGAN  
NCCNTNCTNNGGACTTGANNGTACANGGNANACCNTCTCTTNTCTATTTCATGGGGTGGGGGGTCTCT  
TNTCTGANATAAACCCATTCTGTCACCANTTATTGACTGATNAAANTNGCTGNGANGGCATTCTCTTGA  
35 TGCCTTGNGGCATCCCCCTNNAACCTGTNTNAANNGGACCACATGGCCNTTTGNTATGNACTCGGAAT  
NAAGCNTGNNTATAACCTTTAATAAAATCTTTTTAAACACGGGGGGGGGGGCCCNCCCCCNTGGGGG  
CCCNNTGGGGGCCCNATNNCCCCTATGGGGGNGNNGNNNANCANNNNNNCNNNNNNNNNNNNNNNC  
NNTNCNNNNNNCNNNNNGNNCNNNCNNNNNNNNNNNNNNNCNNNNNNNCNNNNNNNNNNNNNNNC  
40 CCNNNTNCCNNNTNNNNCCNNNNNNNTNNNNNNNNNNNNNNNTNNANTNNTNNTNNTNNG  
NNNTNTCNCNNNNNCNNNCNNNNNNCCNNNNNNCCNCTANCNNNTNNTNNNNNCNACNTNNNNNNNNCN  
NNNNNTNCCC

TTNNNNAAANNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GAATTGCGCACGAGGCCTGAAGACTCTGGTGGCTAAGGGGCTTCATCCCAGCTGAGAAGCGAAGAGC  
CGCAGGCGGGCCGCGACTTCACAGCCGCTCGGGTTTTAGAGCTTCAGCTATAAAAAATGGGCAGGAT  
TTTCCTTGATCATATCGGTGGTNCCCGTCTGTTTTCTGTGCAAACACTGTGATNCGANCANTGNCCANCCG  
50 TTCAAAANTCATCTNTACTCGGTTACAGGCGCCANTGGCANAGCNTTTNTTTTTANCAAGGNAGTTA  
NCCTNCNGTNTAGNGAAGTTNAGAATCGGGNNNTNCTCANTGGCCGCCACNTGGTTCNNNANGTGAG  
CTGCAAAACNNGCATTANCAANCTGGGATGGATNTATAAGTTTGCCANTGANAACNGCCAGNGTTAT  
AAGGAAGGNCNGNNAATCNTGGACCGCCCCTTTTANTNCANAAAAAGNNAGGGCTTTTGAGGGANCA  
TGTCNNCTGATACCTNTGGAATAAAAAAANAATAATCCNTNTTTTCCCAGGTCTCCTTTCACTGA  
55 AAAACAAAAANTTTACTTACATACCCTTGTCCCTTAACATTNAAAGTCGGATTTCNTGAACCTGGGG  
NAACAAAAANTTTGGGGAAAAATTTTTGAAGGGANCCTTCCCTTTTNTTCCCTTTTTTTTTTTTAAA



GCCTATNTGGAGNTGNATNNCAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGTGCT  
 GACGGACCTGTGGAGCTCCTGGCACTCCTGGACCTCAAGGTATTGCTGGACAGCGTGGTGTGGTCGGC  
 CTGCCTGGTCAGAGAGGAGAAAGAGGCTTCCCTGGTCTTCCCTGGCCCCCTCTGGTGAACCCGGCAAACA  
 5 AGGTCTTCTGGAGCAAGTGGTGAACGTGGCCCCCCTGGTCCCATGGGCCCCCCTGGATTGGCTGGAC  
 CCCCTGGCGAGTCTGGACGTGAGGGAGCTCCTGGTGTCTGAAGGATCCCCTGGACGAGATGGTTCTCCT  
 GGCGCCAAGGGTGACCGTGGTGAGACCGGCCCTGCTGGACCTCCTGGTGTCTCCTGGCGCTCCCGGTGC  
 CCCCCGCCCTGTGCGACCTGCCGGCAAGAGCGGTGATCGTGGTGAGACCGGTCTGCTGGTCTGCTG  
 GTCCCATTGGCCCCGTTGGTGGCCGCTGGCCCCGCTGGACCCCAAGGCCCCCGTGGTGACAAGGGTGAG  
 10 ACAGGCGAACAGGGCGACAGAGGCATTAAGGGTCACCGTGGCTTCTCTGGTCTCCAGGGTCCCCCGG  
 CCCTCCCGGCTCTCCTGGTGAGCAAGTCTTCCGGAGCCTCTGTCCTGCTGGTCCCCGCGGTCCCCCT  
 TGCTTCTGCTGGTTTTCTCCCGGGCAAAGAATGGACTCANTGGGTCTTCCCAGGCCCCATCGGTCCCC  
 TGGGCCCTTNAAGGTCCCAACTGGNGAATGCTTGGTCTTGGTGGTCTTCCCGNCCCTCCNTGGAC  
 CCCCTTGNTNCCCCAAGTCTTCCAAGCGGGCGGGNTTNCNAATTTGANCTTCTGNCCANNCCAC  
 15 CTTAAANAAAAAGGCTCACCNAATGGTGGCCCGTTNCTANCCGGGCTTNTTAATNCCAATGGTGGTCC  
 TTNAACNNNACCNTCAAGTGNGGANANCCNCCCCTTAAAAACCTNANCCNANNTAANT

NCANNATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGGATCCCCCGGGCTGCAGGCA  
 20 CCCATCAACCCCCAAGCTGAAGTTCTATTTAACTATTCCCTGAACACTATTAATATAGTTCCATAAAT  
 ACAAAGAGCCTTATCAGTATTAATTTATCAAAAATCCCAATAACTCAACACAGAATTTGCACCCTAA  
 CCAATATTACAAACACCACTAGCTAACATAACACGCCCATAACACAGACCACAGAATGAATTACCTAC  
 GCAGGGGGTAATGTACATAACATTAATGTAATAAAGACATAATATGTATATAGNACATTAAATTATAT  
 GCCCCATGCATATAAGCAAGTACATGACCTCTATAGCAGNACATAATACATATAATTATTGACTGNAC  
 25 ATAGTACATTATGTCAAATTCATTGATAGTATATCTATTATATATTCNTACCATNAGATNACNAN  
 CTTAACNANGNNGCNGGGANACACCACCCNCTTGGTAGGGANGCCTTTTTTTNTNCCNGCCCATAAA  
 ACGGGGGGGGGGGGTTTTTANGGAATTTNNCNCNCTTTNGGNTTTTTTTTNANGGCCTTTTTTTTAA  
 AAAGGGGCCNTTTTTNNTTTTTAAAAAATAATNTCGAANGNACNNAATGGGGTAATAAANCCCC  
 TNNGNCNCNAAAAAAGGNGGGGNGGGNNAANNTTNGGATTTTTTTTTTATTTTGGGGGGANGG  
 30 GGTGGGNCCTCANTTTTGGGCCCCGNNAAAAGGCCTTANCCCCNGGAAATNTATTTNGGGGGGGGNT  
 ATTAAANGGNTTTTTTGGGGCCCCCCCCCTTNTGGNAANAGNNGNGGCNTTTCNNGNNNTNNGGGGGCC  
 AGGNTNTTATTTTTTTTTTTTTTTTTNCCCCNTTTNAAAAAANTTTCCCCTTATNATTCNNCCCNCCNT  
 TTTNNAANAANTTTNCCNAAAAAANTNATTTNAAAATTTTCCNNNNTNNAANCCCTTTNAAACCC  
 N

NNNNATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGNAT  
 NTCCTCCCNNGCCACAGGCACNNCNCNTATCCGGNACCNTNAGGNNNCNCCNNNGCCTTCCNTGG  
 NCTTTGAGCNCNNGNATAACNTATTTATGATGGNANACCGGGCACNCTTGGGAATGGNCAAAANGGNT  
 40 NNGCTNCNNNNTTGGGGCTNGNNGNCGGCTTANNTGAANNNNAGATNTNGNGNCCTNTNGGGACCTT  
 GGAAANGGGACGNCCCCCTTNTCNCNATGNNGAANTTANAACCTCCTGAACCCCTGGANGNCCNGCNTAN  
 NAGAAGCCCCCTCAACCNAGAAANCCCTGCCCTTTTNNNNCTTTTCCAGCNANANGTNNGGNCCCGAGG  
 GCCNTCCTTTCTAATCGACNTTCCAGNNNNCCNTTCTATTTTNAAAAATTTTTTTCANNTTNTACNNCC  
 GCTNNTNNNNTAAGACAGCACNCACNTTGTCTANGNNTAAACNTCNAACNTTTACNATTCTCATAAT  
 45 NTCAAGCNCCTAGANTTTGATAGGGGNNAACAAAACCCCTCGGGTTNNTAAGATGCCTTCAGNNGGAT  
 NTCAGGNGGTNNCCTTCTAGTGCNNGGNNAANGGNGNNGCCCACTTTCATTTNCTGGGGCCCTGTT  
 TCGGANAANTTTCTGGGAGGNTGCCTNTTGCAAAGGNGATTTNCCCCCNCCGCCCTTCTTGN  
 NTNNNAACAACAAGNGNCCCCGGCTTNNAGTGCCCCNNGANGGGGGGGTCCCNNNCGNNTNNGCNCN  
 TATNCCCANAGNCCCTCGCCACCATNGTNGGTNNCAANAANNNTGGGGGNNTTTTGAAATTTNTCCG  
 50 GNCGAGNTCCNTGGAANNNTCTNNNGANAAAAATGTTCTCTCCCCCNCCNNGTNNNTNNTATGG  
 GNCGCNNACTTGGTGGNCCCCCNCTTTNNTNCGCANNCGCCCNCTTTNTTTTTTGGANGGAN  
 TGGNNNATTTTNNNAAGGNTTAANNNGTCCCCC

GANACCCGANANTTANACNNTTNTCTNNANTANNNNTTTTTTTNTATNTNNNTTNTNCCNNNNNTNN  
 NNGACGNCCNCCNCCNANNACTNANAGACNTNAGTANAGANGAGTGCTNCGCACGNGNTCTTNN



GNNNGANNCGNGGGTCNNAGACTAGGCCTNCCNTCGNTTTNGGNGNCNNNNNTNTGGCAGNTCGCATN  
 ACNAGTGGGCGGCCNCNTCCTATAATNAGTGCCGTTCCCCCTTTTTTNCNCNAANTGGTATTANCATNT  
 ATTTTTANCCNCANNAANCTCTNTNTACGNCNCTNGGGGACTTNATTAANCTTGNTCNNTTTATCA  
 NTNGCTNTCCNCNGTCCTCANCCNCNTATNTNCNCTATCGTCNTCNCTCTTTTNTCTNTTNTNAACTN  
 5 ACNCNACACTACCAANNCTNCAANATANTNNCCTCATNATGNANCNNNCTNNNNNCTAGNNTCNTTN  
 TNNATTTTANTCATTTATTCNNNTATNATTANNNCNGAGTNNTTNGGTNTCTTATCATGTNTANTTTAN  
 NCTNCACATANGNCTNNNTTGTNATNNCNCANTNCTNTAGNCAGACCCCATNNTCTCNATNCTNTNTT  
 NATATNACNNTCNTCGACNTTTNANACNCNACAGTCANNTNNANNNNCNTGNCNCGGACTACCANNC  
 NCAATAATANATNANANTCACTGCCTNTCNANNNCNCNGAANGGTTGACNNNTNCCTCGTTNCNCNC  
 10 TGANNNCNCNCCCCGTCATANCTTTNANGATTGCCNNANCAGNANCCCCNCAGNNNACTNANNNNNG  
 AATANCCTNNTTATTCTCTNNCAATNCTTTCTCACCACANTTNTNTTTATNANATNANTGACCGACAGT  
 NCCTCGATTNTTCTGACTCCCTCTTTTCNACNCNACCAACANTCCNCNTGATACCNCNATAGTCCCT  
 CTNATNCTNTTATNNNNCACTACCCNTNNNCCTNCCCTCNANNNTATCTNCNTTANNCCNNGTCTATNAT  
 AAGTTCTTTCTNCTNCNGTATTCTCTCNCNNTTCCCCACCCNTCNANCAACNCTANCTNTNNCTTCCC  
 15 TANTNNGNTNATTTAGANCNNNGNNTTATTNNTCCAAGTANTGTNTNTCTTANGTNNCNANCTTNTA  
 TNCNGTCGTATNCCACTGACCAANCCTCTGTANTANACTCACGTATCCTNTNATCNCNTAATTATAGNC  
 TTCTNGCNCTAGTNGNATNGTNTTATNATCAACTGCNNCCCCCTNCNGATNTTTCCTCTATTATNNTCT  
 NGTANTNNTGANCNNAACACCACNNCNCNTCANTCCTCANCNANGGTGAGNCNNCCATCGATNANTAC  
 ACTCCGTATCTCNTNTTNTCNTCTNTGTNCCCCNCTNCTCTNTCNTACNNTCGCCNTACNGTGTNNAT  
 20 CTANATCGCTCTCGTATCENACCTCTNNTNTNCNCCGTATNNNGNNTCACTCTNATNNTCNATNCAC  
 ACGTNGTNTACTAAANCTNANNNNTTAAATNNCTCATTAGGTCCTNCNCTATNCTCACCTNCTNCTTAT  
 GGCTTGTNCTNANAAACGCGTNCCCAACCNATATGGATCTNACTCTATTGTGTNCTCTCATATCATN  
 NANTTNTNACNCTAGGTNAGTNTCNTATAGNACGANNATTTTNGCNANAAGCNTTANTTNCGGNNNTA  
 TNNCG

GANACCCGANANTTANACNNTTNTCTNNANTANNNTTTTTTTNTATNTNNNNNTTNTNCNNNNNTNNN  
 NNGACGNCCNCNNNCNANNACTNANCANGACNTNNAGTANAGANGAGTGCTNCGCACGNGNTCTTNN  
 GNNNGANNCGNGGGTCNNAGACTAGGCCTNCCNTCGNTTTNGGNGNCNNNNNTNTGGCAGNTCGCATN  
 30 ACNAGTGGGCGGCCNCNTCCTATAATNAGTGCCGTTCCCCCTTTTTTNCNCNAANTGGTATTANCATNT  
 ATTTTTANCCNCANNAANCTCTNTNTACGNCNCTNGGGGACTTNATTAANCTTGNTCNNTTTATCA  
 NTNGCTNTCCNCNGTCCTCANCCNCNTATNTNCNCTATCGTCNTCNCTCTTTTNTCTNTTNTNAACTN  
 ACNCNACACTACCAANNCTNCAANATANTNNCCTCATNATGNANCNNNCTNNNNNCTAGNNTCNTTN  
 TNNATTTTANTCATTTATTCNNNTATNATTANNNCNGAGTNNTTNGGTNTCTTATCATGTNTANTTTAN  
 35 NCTNCACATANGNCTNNNTTGTNATNNCNCANTNCTNTAGNCAGACCCCATNNTCTCNATNCTNTNTT  
 NATATNACNNTCNTCGACNTTTNANACNCNACAGTCANNTNNANNNNCNTGNCNCGGACTACCANNC  
 NCAATAATANATNANANTCACTGCCTNTCNANNNCNCNGAANGGTTGACNNNTNCCTCGTTNCNCNC  
 TGANNNCNCNCCCCGTCATANCTTTNANGATTGCCNNANCAGNANCCCCNCAGNNNACTNANNNNNG  
 AATANCCTNNTTATTCTCTNNCAATNCTTTCTCACCACANTTNTNTTTATNANATNANTGACCGACAGT  
 40 NCCTCGATTNTTCTGACTCCCTCTTTTCNACNCNACCAACANTCCNCNTGATACCNCNATAGTCCCT  
 CTNATNCTNTTATNNNNCACTACCCNTNNNCCTNCCCTCNANNNTATCTNCNTTANNCCNNGTCTATNAT  
 AAGTTCTTTCTNCTNCNGTATTCTCTCNCNNTTCCCCACCCNTCNANCAACNCTANCTNTNNCTTCCC  
 TANTNNGNTNATTTAGANCNNNGNNTTATTNNTCCAAGTANTGTNTNTCTTANGTNNCNANCTTNTA  
 TNCNGTCGTATNCCACTGACCAANCCTCTGTANTANACTCACGTATCCTNTNATCNCNTAATTATAGNC  
 45 TTCTNGCNCTAGTNGNATNGTNTTATNATCAACTGCNNCCCCCTNCNGATNTTTCCTCTATTATNNTCT  
 NGTANTNNTGANCNNAACACCACNNCNCNTCANTCCTCANCNANGGTGAGNCNNCCATCGATNANTAC  
 ACTCCGTATCTCNTNTTNTCNTCTNTGTNCCCCNCTNCTCTNTCNTACNNTCGCCNTACNGTGTNNAT  
 CTANATCGCTCTCGTATCENACCTCTNNTNTNCNCCGTATNNNGNNTCACTCTNATNNTCNATNCAC  
 ACGTNGTNTACTAAANCTNANNNNTTAAATNNCTCATTAGGTCCTNCNCTATNCTCACCTNCTNCTTAT  
 50 GGCTTGTNCTNANAAACGCGTNCCCAACCNATATGGATCTNACTCTATTGTGTNCTCTCATATCATN  
 NANTTNTNACNCTAGGTNAGTNTCNTATAGNACGANNATTTTNGCNANAAGCNTTANTTNCGGNNNTA  
 TNNCG

55 TTNAAAAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
 GAGTTCTGGAGCCAGTATCGGATCAATGTGACTGAAGTGAACCCCTGGGGGCCAGCACCCGCTGCT

GGATGTGAGCTTGCANAGCATNTTGCGCCCTGACCCGCCCCAGGGCCTGCGGGTAGAGTCAGTGCCTG  
GNTATCCTCGCCGCTGCGTGCTAGCTGGACNTACCNTGCNTCNTGGCCCCGCCAGCCCCANTTCNTG  
NTNAAGTTCCGTNTGCAGTACCGTCCAGCANAGNATCCAGCCTGGTNTACGGTGNANCCAGNTGNATN  
GAAGGAGGTAATNACCGATNCTGTGGNTGGCNTGCCNATGTANNNGCGGGTNACCGCCCGGAACTTT  
5 NTGNATGCTGGCACCTGAANNNTCNTGAAGCCCCAAGGCCTGGGGGANTCCAAGCACTGANCCCTTACC  
AAAGGAAATGCCANTTGGGGACCAGCACCCCCCNCCAGACGGAGGAANAACCTTNGGCANACAGCCC  
CCGTTTCCCNAAAGCCGTNCNTTTTTACCCAAACCCANAGCCANTTTGACCANAATAAACCCCTGG  
AACAAGNGGCCCGCCCTGGCANTTTTTGGNAAATTTTNTTTTTCTTGGNACTGGGGGCTTGGGGCCCTT  
GGCATTNGGGGCTTTGGNTAANGGTTGAAACCAAATGAAAANGGGTGGGCCCCCNAAAAATTTNGGN  
10 TTTTTGGNCCCCAAAAGATTTTAAGGGGAAAAACNTTTCAAGGAANCCCCAACCTNTNAAAGGACCC  
TTGGNGGGCCTTTTANTTTNNTTTCNCCCCAAAAGGTGGGGGGGGGGNGGGNGGGGCAAAAAANNA  
AACCCCCGGGGGGGNAAAAANAAATNCCCCCTNGGGGGGGGGGTTTTTAAAAATGGNAAANTTTT  
TTTTGGGANCCCCCNTTTTTTTTTNNA

15 TNNNNCAAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GAATTCGGCACGAGGCAGGACACAGGTGTCTGAAAACCAACCGTTAAACCTAAGCCAAAATGGGAAA  
GGAGAAGACCCACATCAACATCGTTGTCAATTGGGCACGTAGATTACAGGAAGTCTACCACGACTGGCC  
ATCTGATNTACNAATGTGGCGGGATCGACAANAGANCANTNGAAAAGTNNGANATGGANNGTGCCGA  
20 GATGGGAAAGGGCTCCTTCAAATATGCCTGGGTCTTGGACAACTTAAAGCTGAACGTGAGCGTGGTA  
TCACCATTGATATCTCCCTGTGGAAATTTGAGACCAGCAAGTACTATGTTACCATCATTGATGCCCCAG  
GACACAGAGACTTCATCAAAAACATGATTACAGGCACATCCCAGGCTGACTGTGCTGTCTGATCGNT  
GCTGCTGGNGTTGGNGAATTNGAAGCCGGTATCTNCANGAACGGGCAGACCCGTGAGCATGCCCTTT  
GNCTTACACCCTGGGTGTGAAACAACTATTNGTTGGCGTTAACAAAATGGATTGCACTGGCCCCCTT  
25 ACCCNTAACAAATACTAATAATTTGTGNANGAAGCTAACNCCTATGTTAAGAAAAANGGCNTCAGCCC  
CTACCCACAAACATCGTGCCAATTTNTGGCTTGGGAANGGGGACAACNTTGCTTNAANCAAANGCTAA  
TTTTGCCTTGGGTCAAGGGATGGGAAGGNCACCCGTAAAGGGCCGGGAATGCCAANGGGAACCCCCCT  
GGTTGAAACTTTTGGAAATGGNTTTTTGGCCCCCAANTTTGGCCAAANTGAAAAAACCTTTCNTTTGGC  
30 TTTTCCGGGGGNGGNCAAAAAAANGGGGGGGTTTTTGGGNCCTGGCCCCCTGNGGGGGG

35 AAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTC  
GGCACGAGGAAAAACAAAACGGACCCGGGGGTACATGCGACCCTGAAGTCACTCAGTAGTCAGATTG  
AAACCATGCGCAGCCCTGATGGCTCTAGAAAGCACCTGCCCCGACTTGTGATGATTTAAAGCTTTGC  
CATTCTGCAAAGAAGAGCGGAGAGTACTGGATTGACCCTAACAGGGATCTGCTGAAGATGCAATCA  
AAGTTTACTGCAACATGGAAACAGGAGAAACATGTATTTAGCAAATCCATCCAGTGTACCACGTAAA  
ACCTGGTGGGCCAGCAAATCTCCTGATAATAAGCCTGTTTGGTATGGTCTTGATATGAATCGAGGATCT  
CAGTTTGTATGAGAGACCACAGTCACCTAATGCAGCCATTACTCAGATGACCTTCTTGCCTTTTA  
40 TCGAAAGAAGCCTCCAGAACATCACCTACATCTGTAACAAACAGTGTAGGATACATGGATGATCAAGC  
TAAGAACTTGAAGAAAGCTGGGGTTCTCAAAGGGTCAAATGACTTAAAAATCAAAGCAGANGGGAAC  
CGTTAGATTCANATACATAGTTCTTCATGAATTCTTGCTCTAAACGAAATGGNAACGNGGGCAANACC  
NTCTTTGAATNTANAACGCAAATGNNGGCACGCTTGNCATCATANATCTTGGCCCCCTGGGGATGTTNG  
CAGTACCANANCCAANAANTTTGGCGTTGAAATTNGGGCCCANNTTGNNTTGGGTAAAGCCAAGNCC  
45 GNNATCCCTTGGNCANTGGGCCCCCCCCCCTTACCCTTAGNGGNCCCCCCCCCTTCCCCAANAANTT  
TTTACTGGTTTGAACCTGAACCCTGGNAACNTTTGAAANAANGGGGTGGANTTTGGCCTCCANCCC  
NTN

50 TTGANNCNNCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
ATTCGGCACGAGGNCCNNNCNACNNTTNTCNATGGGGGGNNCCTNGGTCAACGCNNGGTTTCATTN  
TANNCCNGCATGANCNTANNANACCCGGCNTTGGTGACCGCNNNCCCNCTNACACGTTGAANATC  
ATTANTATTTCTATCTCACACANGNCTCATTGGAAGCTAGCCCTCGCCGAGTNTGTATTNNTCNANTCA  
NNTNTTATTATANNNNNNCTTTTTTNTANTNCNAACGNCANNCNACTCNGNTTNANTTTTTANNAG  
55 NNGACTATACCTTTNNNNACCACNAAAGGTTNATAAGACTCAACCNANNGGNGTACCTGGNGACNA  
TNTCNNNNTTNNCAGCATNGAATTTATACTATAATGTTTCAGTCAATATAATTCCACTTAATAATTAG

NGAAAATTTTCATATTATCCTAAGTATTACAGNATTAGTCCATTTTTTTCTTCTCCTAAATGAGGAGTGG  
 TTTATTTCTCNGCGGNTTATATCATTAACCTTTCTTTAATTCTTTTNTGNGCTGNGNGNAATATNGATAA  
 NATACNGACCCCTATAAAATAAATGNAAATTAATAAAAAAAAAAACCCCNCCCCCGGGGGGNCG  
 GGAANNNNNGGTNCNCNCTTAANNNGGNGNNNTTNNNAANCCCCNGNTTNGGTTNNCCCCCNNTTN  
 5 GGNAANNNNNCCCCNTTTNNGCNNNNNTNGNTNNTTNNCNNNNGGNNCCGNAAAAANNNCCCCNGGG  
 GGGNGGGNCCNCAANTNGNNNNGGNCCCNNTTTTNNGNCCCCNNNTTTTNNAAAAANNNNNCCNN  
 GNTNNANNNNTTTGGGGCCCCNNNTTTTGCCCNNGGGGCCT  
  
 10 GCCTATANNAGNTGNATNNCAGNGGCGGCGGNTCTAGAACTAGTGGATCCCCCGGGCTGNAGGAAT  
 TCGATATCANGCTTATCGATACCGACGACCTCGAGGGGGGGCCCGAACNNANTTNCCCTATNGTGA  
 GTCNNATTNCAAGAATAAACGGATCTTGAATAAAAAAAAAAAAAAAAAACCNGGGGGGGGANCCGN  
 NCCCNATTTCCCTNNNAGGNGNTTANTAAAAAGGACTGTNACTGTGNNNTCAGTGAACGNNNGCT  
 NANANTCANCCNCTNACNCTCCTGTACCACANGNGTATTNAACTNGGGGNTNTTATTAAGACTTTT  
 15 NTGANNACACTNNTNNTNNTTCNTTTGNAANCTTNTCCNNTGCAGTGNTGTCAAATATNNNCNGNNA  
 ATTTCTCTAAANNNNANACNNCTNCTNNTTTATAACCTANTTNCNNCCANNNGNCNANNTTTNNANCCN  
 ANNGNNNNNAATGTAANTTACNANNCTTNGATAAACCCGTNATNNANTANACNNTNACCAAANCTGN  
 NATNGANGTGNTCTAAAAANATNATNNCNNNNAAANGTTTAGTTATTTAANTTNANTNNGNCNCNNA  
 TTNTTTNTTNNNATNNATNTNNAACCCCNNGGTCGNNANTNTNTNTTTNTTTTNTCTANAATNCAAT  
 20 TTCCTANTNNNNAAANTNNNANNNNACNATNTCCCTNANANNTNCAANTGANCTTNTGAAAANTNTA  
 ANNANNNATNCANTNCTCNANNANCTANANNNANNTANGGAAATNATNTNGNNTGCNTTTTATTA  
 NNTTTNNTTNTTNTNATNTTTCNACCNAATCTNATATTNNCTTTNNTAANNNTCTANNNTTTTTCAT  
 NTTTNACTCAANCNTATNANTCNACGNAAATNCNNCNTNGNTNCANTANCCATNNTTNTNCTANTAT  
 TNTCTNCAANANNNGCAATCANCACTGTGNANATCCTANCNNGCTGTNGTCATCTACATACNNTNAT  
 25 NTNTANNTGNCTTANANCGTANTNCAANTCANTCTTTCNNTTANTTNTNNTNNTATCTCATNTTNAC  
 T  
  
 30 NNNNACTGGAGCTCCANCGCNGTGCGGCGCGCTCTAGAACTAGTGGATCCCCCGGGCTTGAGGGCCC  
 NGGCTGGATCAGCTGCTGGGGACACTCTGACCCCTCAATGCGGGCCTTCTGCTCTCCCTGGCTGCCCT  
 GCGTGACAACCACCCCACTCCGACATCCAGGTGAAACTCTTTGTGGTCCCTGCGGACNATGCCAGG  
 CCCGAATCCNTTATGCCCCGTNAACCATAACAAGTACATGGTGACTGAACGGGGCCACCTACATCGGA  
 ACCTNCAANTGGTNTGGCANCTACTTCACCGAGACGGCNGGCACCTCTCTGCTGGTGACACAAAACGG  
 GCGGGGTGGCCTGNGGAGCCAGCTGGANGCCGTGTTCCCTGAGGGACTGGGACTCCCNNTATAGCCATG  
 35 ACCTTGACGCTGCCGNGACAGCGTGGGCAACGCCTGTCGNTGCTCTGAGGCCCGGTCCGATGGCCA  
 GGCCAGGCCTGCAAGGCCCTGGTGTCCGGGTCTCCATCCCCTGTCCCTGTGCCCCCGNTTTTGTCTG  
 ACCCGTTGTGACTNCAACAGGCTCCCNCTTAGCAACCACCCCAACCCAGCCTTTCATTTCTACCTCCA  
 CCCCCNNTTGGNCTGATGCTTGTGGGGCCCCAAGAAGACCCANCCGAGCTGNGGGAAGGGCTCAATNC  
 CAAAAAANAAGTGGGGGGTGATGCTTNGCCTTACCTTCTGGGCCAACCCANTTTCCAGGGCAA  
 40 AGNAAGGCCCCAGGTNATAAATAAAAAAGTCAAATTACTTTGGNTTTNAAAAAAAAAAAAAAAAAAAA  
 ANTNGGGGGGGGGGGCCCCCNCCCAATTTTCCCTTAAANANGGNNNNNNNNNNNAAANNNNNNNNN  
 NNNNNNNNNNNNNNNNNNTNNTNNNNANNTNNNNANNNNNNNNNNNANNNNNNANNNNNANNNNN  
 TNNNNNNNNNNNTNNTNNNNANNNNNNNNTNNTNNNNNNNNNNNNC  
  
 45 GCCCTATCTGGAGCTNNANCNCNGTGCGGCGCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
 TCGGCACGAGGCTGGNATACAGGAGGCCCTCCTACTTCTCTGGGAAGTCCCGACGAATTAAGTGGG  
 GNACTGGAAAGTGCTNTAAGGGAAAAAAGANCNCGCGTCTTCAAATTCATTTGAAGANCTNAATAAC  
 NCTTTCCATGAAGCTGTTGNGGGGGGNGGCCANANTCTACTGNATTCCCGTANANNNGGCTGNTA  
 50 TGGGNGCGGCCCCATTATTANAACANAGGCCGCTGNCCGAGGNTNACTTCCACNCNCCTTTTCTG  
 GCTTGAGGCNCCAAACTNCTCAAANCTANACNGGCTGCTTCTNANAATTTTANGGAGGCGGGAGAA  
 GTATAACCCCTGGGGAAGAGGGGGCCACATGATGTGGTTCANCTGGAAGACACGCACACCACATG  
 CTCTCTGGGATNCTCTGTACAGAACGGACNACACTTGNNTCNACGCCNANNGTCACATNTCGACTGNG  
 CAACTCTTANNATNNAAGGACCCCTCGGGGCCNGTGGCTGTTNATATGCNCTATTTTGGAAAAAAAC  
 55 ACAAATTTGTAGGAAATACCNNTTTTTTTTACATTNNTNANCAACCAAACCTGAGACCCCGGTCA  
 GGGTTTTTTCATTTNAAAAATGTGNTCTGCTTNTTATNGGGGCCAAAAAGTTGAAACAGCNTTNCCTT



AACAAANCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATT  
 CGGCACGAGGCACGGCTTTTCCCCCTCTGACATCGTCTGGGGTCTGATTCTGTCTCTCTTTGA  
 5 AAGCCCTCTGATGAAACAACGGCCCCATCCCTCCCCTACAAGGGTTTCCATTTCCTCCCAAGTCGTCTAT  
 GCATTTCTCTCACCGTTTTCTGCCTCATTCCCTAGAGAAAACGGGCATCTCATGTTCCACCCTCTGAGAC  
 CCCCCCTTTCAGAAAATGCTGTGCATTTTGGAGACGTGAGGATTTCTGTCCAAAGTTCTGAAAGCATTG  
 CGGAGAGCTCGTTAGAAAATAAAAATGGGAAAAAGCAAAACGAAAAGGCGGTGTCCCCCACGTCCC  
 TTTCCACTGAGTAAGACCTAGCTCTTTGCGATTGTGCAATAAACTACTTGCCGTGAGAGCAGGTGGCC  
 10 ACGCTCCTGCCCAGACTACTAACTGACACAGCACANGACGGCGGGCTGCACGGGGGCTCTCCCAAAC  
 GCCTNCCATGAGCTCAGCTTCCCCCACCACCACCAAGCACCGTGTCTTGGCGNGTCTTTACATTT  
 TAACAAGTATTTTATATTTTCTGNAACCGCACTAAGTCTTAAGGGGTTTTTAAAGCTTCGGTTGGTTCA  
 TACTACAATCAAACTTTTTTTTTTTTTTAAACCCCCCNANGNCCCCANTTGGCCCCAAAAAANA  
 AAAGCCTTTTTTTTTTGNCCAAAAANACTTTTAAAAAAAACCTTTTGNNGGGGGGGGGTGGGNNC  
 15 CCCTTTCCCGGNAANAATTGGGGNNNNNTNGGCATTTTGGGGCCCCCGGGGGGAAAAANA  
 AAAACCTTTTCCCCCCCCCTGGGNNNNNGGGGGGGGGGGGAAAAANCCCCGGGGNCCCCTTTTTTGGN  
 NNTTGGGTNAANCCCCAAANAN

20 NAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCAA  
 GTGCGGGGGCCGCCACGGCAGCCTCCCCAGGGGCAGCCCTTGCAAGGCGGCATGCTGGCCTCCTTACG  
 CCAGAGCGGCTCCGACCTGGCCTACAAGCTGTGCCACAATGAGTGGGTAGTGGTGCAGAGCTCCACGC  
 ACCTGGTGGACGTGGCTGGCTGCGCTGTGGACGTGCAGCTGCTCGAGGACTCCCACCAGGTGAGCAAA  
 GACGGCTGCAGCTGCAGCTGCTACTTTCAGCAGCGGTACCACCTGCCGTGCCGGCACATCCTGGCGT  
 25 GCTGCACACCAGCCAGAGGCCCTGTGAGCGAAGCCATGGTGTGCCCGCGGTGGCAGAAGAGGTACCAG  
 CACCTCCTCGGGCCCTGCGGGGAGCTCCGGGACCCCATCTGATCCCAGCAGATGCAGGCCAGCCAGG  
 GGAACCGGGACGGAACGACATGATTCAGGACCTAAGCAGGGAGCTTGCAAATCTGCTGATGCAGAGT  
 GAGGGACCAGAGCTGGAGGAGCGCTCCACGCTGCGCAAGATTGTGGACATTNTGGGCGGNCCCC  
 CGCCAGCCTTCTGAGCCCAGTACCAANCCGANGGAATTTANGGATGTGGGCTTGNCTNCCTTTTCTT  
 30 NTGGGGAAGCANGAAGGAAGGGGANGGACTGGCTTCTTGTGTCACCCACCATTTCATGGTTGAAA  
 CCCCCTTGGCCTTGGCATTGCTTAGGNCGGCAAGCCCCNTTTTCCNTTACAGNCCNAANAACCTTNA  
 GGGGGGCCANGAATTTGCCTCGGGGGTCAAGGGTTTTAAANCAAAGGTNTTTTTTTNGGGGNNGGGT  
 AAGGAAAAAGGGTTNCCAAAAAANCCCCCTTTTGGGGGGGAAAAANCCNTTTNAAAATN  
 GGNCCCCNNTTTTGGNCCCGGGTTTT

35 AAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGAAAA  
 AAAGAGAAAAAATTTAAATAAAAAAAGAAAGAAACCTCCAACGTATTTTATCACTACCTATAGG  
 AAGAAATCCTGCTTTGAGAGTATTTGTAATGCGGTTTTGTTGTGCTTTGTTGCTGCTTATTTACTAAGA  
 40 AAAACCCAACAACCTGAGACTGCCTAGCCCCCGGTCTGTGCGCTTTTATTGTGCTTCTAACCCAGTA  
 GAGTAGAACTAAATTGCACTGAATGTATAGTTAACTGTCTTGAATCCTCTGTTTATGCAATGTGCTCGA  
 AAGAAAAACAACGTATAAAATATATCTATAATAATAATTTTGGTCATTTCGTCTTTATGTCCAGCTATG  
 AATGTAGATTTTGTGTCCCGGCAGCAGCTCTGTTTCTGGTCAAGTACTTTGTATTGTATACCGTGAGT  
 CATAATAAAAAAAAAAAAAAAAAANCTNGGGGGGGGGCCNNGNCCCCANTNCCCCNTATNGGGAGCG  
 45 GTTTANANNN  
 NNN  
 NNN  
 NNN  
 NNN  
 50 NNN

AAANCTGGACTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCGTGGGT  
 AGAGCGCTGAAGGCCTCAGGGACGCTTCGAGAGTATAAGGTGGTGGGGCGCTGCCTGCCGACCCCC  
 55 AAATGCCACACGCCACCCCTCTATCGCATGAGAATTTTGGCGCTAATCATGTTGTTGCCAAGTCCCGC  
 TTCTGGTACTTTGTGTCTCAGTTGAAGAAGATGAAGAAATCCTCGGGGGAAATTGTCTACTGTGGACA

GGTGTTTCGAGAAATCCCCCTGCGAGTGAAGAACTTCGGCATCTGGCTGCGCTATGACTCCCGCAGCG  
GCACCCACAACATGTACCGGGAGTACCGGGATCTGACCACTGCCGGCGCCGTACCCAGTGCTACCGA  
GACATGGGCGCCCGGCACCGAGCCCGGGCCCACTCAATCCAGATCATGAAGGTGGAGGAGATCGCAG  
CCAGCAAGTGC CGCGGACCCGCGGTCAAGCAGTTCCACGACTCCAAGATCAAGTTCCTCCACTGCCCCAC  
5 CGGGTCTCTCGTCGCCAGCACAAAGCCACGTTTACCACCAAGAGGCCCAACACCTTCTTTTANGTTCA  
GGCCCTCTGTCCCCAGGGCTGCACAAATAAACTTAGTGGGAAAACTGNNNNNNNNNNNNNNNNNNNNNN  
NNNNNNNNNNNNNNNNCCCTGGGGGGGGGGCCGGGCCCAATTTCCCTTTTANNNGGGGNNNNNNNTNNA  
NANN  
NN  
10 NNN  
NN  
NN

GCCTATANNAGNNGNATNACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGCTG  
15 CGAANGCCAGGGAGTTCAAAGAATGCGTGGAGTGCTTGAACGCTCTCTGAAGATTAATCCCATGCAG  
CTCGGAGTGTGGTTTTCTCTGGGCTGTGCCTATCTGGCCTTGGAANACTACGGAGGTTTACGCGAGGGC  
ATTTACGCGGTGTGTGACTCTGGAACCCGACAATGCTGAAGCTTGGAACAATTTATCAACTTCTTATAT  
CCGCTTAAAACAAAAAGTAAAAGCTTTTAAACATTACAAGAAGCCCTCAAGTGCAACTATGAACATT  
GGCAGATCTGGGAAAACTACATTCTACTAACACTGATGGTGGAGAATTTTNTGANGCCATTAAAGNT  
20 TATCATCGGCTCGTGTGTCCTACGANACNACTACGATGNTCCNGTNTTNNNAANCTTGNTNGGGNCN  
GNCGANTGATNGNNATGGACCNGNCCGATNTGGCTNAGNANGAACCCGNCCTCNNCAAAGAAAGNTN  
CCAGGAGNTNNTTNGNNNAGTGTCTTTCNCNTAACTGGNNNNNNNGNNGGGGAAANTCACGGNNGGG  
CNGTTNGNCTGCTTCANATTNGAAANGGCCCGGGGNTNANTNACCCTCCNTGANATAAAAAAGGGG  
NACNCCCCTTNCANTNTCTTANTGNANNCATNGGNGNCCCNACCCCCATNTTTNGGGGGAAAAA  
25 AAAAAATAACTNTTTTTTTNATNTAAGGGNNNNANANANCCNTANCCCTTCGCACCNTTGGGCTTTT  
AATTTNAAANAAAAANAAAAATCCCTCCCGGGGGCCTTTTAAANATATNCGNGTTTCCAGNNNCCC  
ANNCNANTTTTNGGGNGCTCTNNTTTTTTATAACANAAAAAACNNTTTTNTNCANTANTTGCCAANTG  
GGAGAAAAATANNNGCNCGAGTATNTTATGNTCNAAAAAAACCNTNATTTTNNNCCCCTCTTTNN  
NTNCNNNNNTNTNNAATANTTCTTCNTNCNCTNTTCTCANANNCT

NCANNANCTGGAGCTNCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGTA  
GTAAACCCAAGCCCTTGACCTCTTACAGGGAGCTTTGGTCTGGCCCTTCTTAATAACNNTCCGGGCCCN  
35 ANCNTGGGNATTNAACTTTNANCTTNANGGNCNGGTTANNANTGGNCCNACCACCAANNTTNNNAC  
CATNNNNCNANGGAGNCAAAAAGGTNTCNAAAANNCCNTTCNAGGGNCCNTNCCCCANCTGGC  
CNAAGGGGCTCGGTATGGNANAANTCTTTTANTANTNTCNAAAGNACNANTCTTTANCGGANTTTT  
CTNNANNTTTTACNANTNAGGCTGGCCCCAACCTNGACNATAGGNGGTNGNNNACCCCAACANG  
GCTTCTCACCACATATAACCCCTATANAAGTCCACATGNGCACACACACTCTGTGTCTATATGNGNCT  
TCGGNGAGTTCTATANACACTGAGNCCNATATATANTATNATANAGGGANACGCGAGCGNATATAN  
40 CACNCGCNNTNTNTANCNNNATCANNTTGAGAGTANNNTNCACTNTNNNACNNNNCTGAAAACNNTN  
NNANACNNNTTNTATATCCNACGGAGGANTACANGNCATCATNTTTTTGTANACACAGGGGTTACAG  
GCGNTCTCGACGNTCATNTGGGGGCACCNTCTTTAATAAGTGNGCTGCTTCCCGCCGACAAAAAAA  
ATATTTTACTTCTTAACCACCACTTCTGCTNTTAAGACGCGNGGCCNGATGNTGNCGTNTNTTAGACGA  
45 NGTAGGGACGATTTCTCCATGATGCTATCTATTGANGANGNGGGCTTNAANAANNNNAAAAANNNN  
NNNTTNGGGGGG  
GGNGCCCCCN

TGAGNCCNTNANNGNNTCGTATTACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
50 NCNAGTNNNGTTTTNTTTTTNTNCCAGNGAAGGNNTTTTTTGGGCCNGGGCNTNCTNNTCCNAAAA  
ANNAATNGGNTNCACTNGCTNCCNAAACGGNNGTCNNCCAAAAANGCGNATGTNCTTNGNAAAGGNN  
AACTTNTNTNAAAAAACCCCNNGGNGGNGAGGGNNGACCCAAAGGNNANAAACAAACTNGTA  
NGGCCNNGNCNTCGGGNNGNTNCCCGGTTTCANGNTTNGNAAANTGGNATNAAACCTNCNGNCCTT  
CCNANTTNTGCCNNTNTGAACNCGGGGATTTGNGGAGAGANNCCACNNGACNGTTNTTTNNNA  
55 GNANNGNCAANCAENGCGACANNTNTACNATGTNGAAANNCCAAANACTTCTNATACNNNNCCCTT  
TTNTCCCTGAANGGGAGAATAAGGGCNTTTCTTTGTGGNANAAANACCTNATAAAGCNCCTTGGGAC







TTTTGGGGGGGNGNGAACANGGAAAAANGGGGGGGGAAAACTTTTTTTTTTTAAAAATTTTCCC  
CCANAATTCTTTNNNNCTATTGGNCAATTTTGAGTTAAAAAAAAGGAATGGNCTTGTTACCTGGTTN  
GCACCAACANCCTTTANGGGATNGGACCANTTTTTTCNTTGGGAAAAAATNTTCCCANNNNGAAACC  
TGNAAGGGCCNCNCCCCAGGGCNCNTTTTGGGTNATTTTTCNNNCNTTTTNAGGGAAAAACTTNN

5

TNNAACAAAAGCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GAATTCGNTATGAAGCTTATCNATACCGTCCACCTCTANGGGGGGCCCGGTACCCANTGNNCCCTATA  
NTGANNCACATTACAGCCCGGAGGAATGGTAGATGGCANGTGTCTTGTTTTTAACCAATATGAGGGA  
10 TGTCCTGAATTTGGTAGAACAACTGTGAGACAACCTCAGCAAGCTTTGTAAACAGGTTTATATTCACT  
TTGGGGGTAATGAAGCATTTCAGTTTCGTGAGTAGAGGGCCTACTTTTCTTTCCTCACCCTGTATTTA  
AAAGTCTTCTAAATATGTAGTTTCGGTGTATAATTCTGGGCGGGGGGAGTTTTTTTGGGGGGGGAGCA  
AAATATGTTTTGAGTTCTTTTCCCTTTAGGTCTGTCTAGAATTCCAAAGGCAAATGACTCGAGGTAACA  
GGCGAAAAGAAAATCCAATATCAGGATAATCAGAACTGCAGGTTTACAGTTATAGAACTCTAGC  
15 ACAAGCAGCTTTCACCTTTGANGTCTGTGGCGCAACTTGTCCATTGGAAGTAATGGCTGGTAAGTTTATT  
CTTTTTTCCCCACCCCTTTATTAATAATTTTTATAAAGGACCGTAACCTGGGTATTTTTACTTAAATAN  
TTTTGGGGGGGGGNGNGAACANGGAAAAANGGGGGGGGAAAACTTTTTTTTTTTAAAAATTTTCCC  
CCANAATTCTTTNNNNCTATTGGNCAATTTTGAGTTAAAAAAAAGGAATGGNCTTGTTACCTGGTTN  
GCACCAACANCCTTTANGGGATNGGACCANTTTTTTCNTTGGGAAAAAATNTTCCCANNNNGAAACC  
20 TGNAAGGGCCNCNCCCCAGGGCNCNTTTTGGGTNATTTTTCNNNCNTTTTNAGGGAAAAACTTNN

TTNNNNAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GAATTNGANNTGANGCTTATCGATACNTCCACCTCNANGGGGNGCCCGGTNCCCAATNCNNCCTATA  
25 NNGANNCCNATTACAGCCCGNAGGAATGGTAGCATGGCANGTGTCTTGTTTTTAACCAATATGAGGG  
ATGCCCTGAATTTGGTAGAACAACTGTGAGACAACCTCAGCAAGCTTTGTAAACAGGTTTATATTCA  
GTTTGGGGGTAATGAAGCATTTCAGTTTCGTGAGTAGAGGGCCTACTTTTCTTTCCTCACCCTGTATTT  
AAAAGTCTTCTAAATATGTAAGTTTCGGTGTATAATTCTGGGCGGGGGGAGTTTTTTGGGGGGGGAG  
CAAAATATGTTTTGAGTTCTTTTCCCTTTAGGTCTGNCTAGAATNCCAAAGGCAAATGACTCGAGGTAA  
30 CAGGCGAAAAGAAAATCCAATNTCAGGATAATCANAACACTGCAGGTTTACAGTTATAGAACTCTA  
GCACAAGCAGCTTTCACCTTTGAGGTCTGTGGCGCANCTGTCCATTGGAGNAATGGCTGGNAGTTTATT  
NTTTTTTCCCCACCCCTTTATTAATAATTTTTTATAAAGGACGTAACCGGGTTAATTTCAACTTAAATA  
TTTNGGGGGGGGGGNAACAGGGGAAAAAGGGTGGGGGAAAAAACTTTTTTTTTTTAAAAATTTCCCC  
CAGAATTTTTTAGGNCTTTTTGGCCAATCNCGATTTAAAAAAAAGGAATGGAAATGGCTAACCTGGTNG  
35 GGAACCAACCNCCTTTAGGGANTGGAAAACCCCTTTTTTTNTTGGGAAAAGGTTTTCCCAAAAGGAGN  
TCNAAAGGAACAAACCCCCNGCCGGGNTTGGGGNNCCTTTTAAACCCTTCCCCAAGNAAAACCCCTCN  
AAATTGGT

TTGANAAAANCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
ATTCGGCACGAGGCTTATNTNAANCGTTNGANNGNAGGTGGCNCNCNNTAAAAATNTNCTTCANATATT  
GNANCNTNTTNGNATNCCTCATNNATGCNTGGTTGATTGAANANGNGNNACTAATTAATNTGGAC  
NGGNAGGGNNTNCANANGAGNTNCTNTATCATCAGCAAGCCNATAANNTANGATCAATNTATNNTCN  
TATGTNGCNGCNTTGCTCATGGTATTCAANAATNAANNCCNNGCACNATGCNANCCTGGNTTGNANNC  
45 NTGACTAATGAAANACAGATGCACANCGNCAGNTATGAATACTGCTTNTCNGGAGGATAACGGAAN  
GNACGNTGGATAATAANGATTAAGAAGGCNNNTCNAGATGATNTTGNGGANTTTGNTTTGGCTCTNTN  
GAANACTGCTCCCCAGNTAGATNNCCNATNGNTACGTGNTGACTTGANTGGCCTTCAGACTGACGNGG  
ACNCTGTGANNGATNNTNTNCCATATGNAACNTCAGAACTANCANGANAAATTATCCNGGGTCTCTC  
TANAATNACTGANTACAGGANCTNGATNNAAGACNTTTGCTCANNNCNATTTTGGTTTATTATGNTAA  
50 AGGATTTTGCTTGCTCTTTCTTATGNNTGACCGNATATGANGGACTTCANTGTATAATGGAAAACTTG  
NTTGATTTTGACCCAGGGCCTTATATTNAAGCCNGNGGGAATCAAAAAANTNNNGGTTTCAAAATTTT  
AAATGGGGTTCNCCTTACAANTTTTTTCCNCTTGGGACTTTTTNCCCATTCCCGNAAAAGNGTTTTNN  
NGNAAANNATTTCCCNNTTTNGNNNGGCTTNCCTTTTNAACNANNNNNNCTGGGN

55

TNNANCNNNATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GCCTTGGTGTCCGAGCACTCTCTCCCTCTCTCTAGGGCGGCGACCTCCGGCGGCCGGAAGTCAACAT  
GTCCATCCTGAAGGTCCACGCCAGAGAGATCTTTGACTCTCGTGGGAATCCCACCGTTGAGGTTGATCT  
CTTACCGCGAAAGGTCTCTTCAGAGCTGCTGTGCCAGTGGCGCTTCAACTGGAATCTATGAGGCCCT  
5 GGAGCTCCGGGACAATGATAAGACGCGCTACATGGGGAAAGGTGTCTCAAAGGCTGTTGAGCACATC  
AATAAACTATTGCGCCTGCCCTGGTTAGCAAGAAGCTGAACGTCGTGGAGCAGGAGAAGATCGACA  
AGCTGATGATAGAGATGGATGGCACAGAAAATAAGTCCAAGTTTGGTGCGAACGCCATCCTGGGCGT  
GTCCCTGGCTGTCTGCAAGGCTGGTGTGTGGAGAAGGGGGTGCCCTCTACCGCCACATCGCCGACT  
TGGCTGGCAATGCTGAGGTCATCCTGCCAGTTCCGGCTTTCAATGTCATCAACGGTGGCTCTCATGCTG  
10 GCAACAAGCTGGCCATGCAGGAGTTTATGATCCTTCCTGTTGGGGCCCCGAAAACCTCCGGGAGGCCAT  
GCGCATCGGANCCAGAAGGTTTACCACAACCTGAAGAATGTCATCAAAGGAAAAAATATGGGAAGG  
ATGCCACCAACCGTGGGAGATGAAGGGCGGCTTTTGGCCCCAACATTCCTGGANGAACAAANAANCC  
CTTGGAGCTGCTTGAANAATGCCNNTCGGCAANGGCTGGCTACCANCNGACAAAGGCCCTTATTGGG  
CATTGGACGTAACCTTGCCTNTGAGTTNTANAGGTCCGGGCAAGTNTTGAACCTGGACTTTAAAGTCC  
15 CCCGATGACCCACNNGGTTCAATCACACCCGNAGAAGCTGGGCCCCACCTGTNCAATTCTTNN

NNATCTGGAGCTCCACCGCNGTGGCGGCCGCTCTAGAACTAGTGGGATCCCCCGGGCTGCAGGAATT  
CCGCCCCGAGGGCAGTGGACTGCNNTCGCCACCTTCCTCTATGCGGAGGTCTTCGCTGNGCTGCTGCTC  
20 TGCNTTCCCTTCATTTCTCCCAAAAAATGGCAAANNATTTTNAAGTCCCNCTTGTGGAGTCGGTATGG  
ACATATGGCACCACCTTCTTTGGGGCTCTCATTGNCANCTTNGNGCTACAGNACATTGATGCTGTTTCGN  
GAGATTNAAANNTATGATGATGNGACANANAAGGNGAACCTNCANAACNNCCCTGGGGCTGNGGAG  
CACTTCCACATNAAGCTTTNCCGTGCCAGAGGAACCTNTACATTGNTGGNTTTNCCTTGCTGCTGCCC  
TTTCTGNNTANACGCCTGGNGACTCTCATCNCACAGGNCNCGCTGTTGGGCTGCAANAAANNNTT  
25 TAAAAAGCCGGCANAGAGCGCCAATGNTGCNTCCAAGACCTTGNATGGAGGANNAAACCACCTCCNCA  
AAGANTGNTNCTGGNGGGAACACCTTNTTGGGGTGGGGACCNCCTGAAATNGCCCCGGGAATAA  
AAAAAGANNCNTNANGNTTTTTTCAAAAAANCCANAACNNAAGGNTGGNGTTTACCTTTNCAA  
GGNGGGAAAAANGNGGGAANNNAAAAATNTTGCNNTTTCNCCAACCNNTTTTAAAGGGGCTTTNCC  
ANGNGGAANTNANACCCCTGTTTNGGGGGNANACNCTAAATTTNGNGAGNNTTNCNTAANTGGGG  
30 CCCCCNNGGCCCANAAAAAANAATNANCNTTCCCCCNCCNTTNTTNGNCCNCTTNNCCNNA  
AAAAACCCCTCTTTTTTTGAACCCCTATNTNTTGGGCGNTTTTTNTTCTNANNGGGGGGGG  
GNGGCNCCNCCNTGNCNNTTTTTTTAAGGNGACCCCGGTCCCCCCCCCNAAAAAANAGGCN  
NGGCC

TCGGCNNNGGGGNGNGCNCNNGTCCNAACTCCGCTNNCNANAGCNANATNTGGAGCNCACCCNC  
GGNGCGGCCGCGTCTAGAACTANTGGANCNCNCGGGCTGCACGNAATNNGGCNANAGNNNTTNN  
CCTATTACAGGNTAACANACACGNNNNACCCNGGGGGNCCNCTGCTCCNCTNNNACTTNNCNTNC  
NTTNNNCNNTAATANANTTCTTNTANNAGATATGATANNANNNCCNCGNCCCTCAAACTCNTTTT  
40 TACCNTNGTNTNGCNATCCAATCGNNNGCTCGGCGCTGNNNGNNGNATGNNGTAGTTNNNACNNGC  
TANAAGNAGTNANTTTNTTNNNTTNNNTTGTNTNAGCNGCGNACCGNNTTATATTTNTAATN  
NNACAACGTNGTACTTCCNATTGTNGNNACTCTANNCCNTNTNGTGTAGACCTNTANNCTNATTCTN  
TATNTNNGNNGNNCNANGNAGTTCATNTNTTNTGTNNANNGTNNCNCNNGNANACGNCTTANTTT  
ATTNATTTACTNTATGCTGTNGNGNCTNNNTNTANTCNNTNNAATANTTATNCGACGNNTANNTNN  
45 TGANTGTNTTANTANTNTNNANCGTGNNNTNATGNNNGNTCTCCNNNNNNNGNNTTCGANGCGNAAG  
GNGCCGNNNNCNTNNAACCACTTTANGNAGCNACGTGTNAACNTNNTCNATGTCNTNNAGNCCNG  
CNCNCGNNGNNTTTCGNTTCCNNTNCGCTTGNNGNNTNANCTATNNTCNTNNGNTTCTNNNT  
NTAATCCTNTTCTNCAATNATCCGNCNCCCCCCCCCTNNCTCNACNNTCTCNNTATCCNCTGCTCNCN  
CANNGNNACTAGNTNNTANCATTGTATNNCNTCGNATNTANTTACCANNGCATGANTTCGCTNT  
50 NANTCGTNTNATAAATNNNANACNCCNATTGNATTACTANATCACNGCTTTNTAANTGNTCNCG  
NANNNGCNGCATCTGNGCTTNNCGATNCNANTTNCNTGTGAGNNGGANGGACCGTATNNANTNT  
NNNNNCNTCTNNCGNANNNCNGCNCNTACTTNNCCNCTCTGNTCTCTAGNACNTGACNANTTGN  
ANCNTCNNNCCACTCNGNGANTANACACNGNGNTTCTCTAATCTCTAATNCGGGACGGAAGGGN  
CTCCNCTACGNGGATNNNGTNGTGANNTAANCNNNGCTGTNGATANNNTCGCCCCCCCCCCCCC  
55 CCTCTNTTANTTCACTTNTGTGTGNTACNATNAAGCNAANTCTATNCTCTNCTCNCCTCCGTGTG  
GGGGGNGGCNNTCNC

TTGANNANANANGGAGCTGCNCNCAGGGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCANG  
 NNNGAGNCCNNNTNGTATTTTTATNNAANNGNCGGTCNNCNANTTGGGGGGGNATATNGNACNCAAC  
 5 ANAATATNNGANNNCGTTNNAAAANCNTANCNATGTNTTGTCTCCAAAGGGGGNGNCCCCNCCTNGC  
 NAGGGNCNTNNTTGTATTAATAAAAAACGCAGGNAGNTNGGACNNNNTANNCTANCGNANANANNT  
 CNTNACTCGGNAACCNTAANNNTGNACAGNTCAGGNGNATTNNTAGNNCTGNNANTNCNTGGNANNA  
 NNCANANNNTAAANTNCCNNNNNGNNNNNNNGNNNGTNTTNNCTCTAATTCNAACNNACCGGNGGNA  
 10 NTTNNNGTGGNNAGAGNCNNNTGACNCNNGNNTTNTCTATNTATNNGNGNTGTGNANANATGNGAGA  
 CGNGNNCATNGNGANNNGGTNANACNGGTNNAATTNNCNTTTCCNANGACNANNCTNCCNGCCNAN  
 GNTTTNGANNAAGCCATANTCCNNNNCACNTACCANCCTTNTCTACAANNNTNAATAACGNCNTGCCANA  
 ACTNNCNNGGANTNNNNNTNNGGCNCNAANCCCNANACNANCCCGGNTTANGGTTNNATANGGGCT  
 CGNGGNACNGNTNTAANTTATAATNATTTACTNAAAGACACCAGTNNNCNATNGACNNGTGNTCAG  
 15 NNNAGTNGGNTGANNGTTNNTNANTNCGNCAGATCCNNNTNTTNCGANAANNACTANGAGATNAGGN  
 GAGTNGCNCNCGGGGNTTCAAANTTTGGATGTTTNGGCNAGACGATNNTNTNTNCNGGNGACANACT  
 ATNNTACTNGTNGTGNCNNGGANNNNGGCACNCTTGTNTANNGTNATNNCTANNAGTAGTGAAGACNN  
 CGTCACNTAGANTANGATTGGANGNGATNNTNCTCANTATGAGAGTAGACAATGNANNGNCANGANG  
 NTTNCNGTTTANNTAGNGGNTANTNNNNNCNNNTNTGAGANTNNTNAGNACTCGNNAGCTNTGTANN  
 20 NANTGCTTATGCCNCNAAACAANAACNTGGNNCTGAGANTGGNCNTGGNGGNNTCNTNNTGAANTAA  
 TACGCAGGAAGANCCG

TTGANNANANANGGAGCTGCNCNCAGGGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCANG  
 NNNGAGNCCNNNTNGTATTTTTATNNAANNGNCGGTCNNCNANTTGGGGGGGNATATNGNACNCAAC  
 25 ANAATATNNGANNNCGTTNNAAAANCNTANCNATGTNTTGTCTCCAAAGGGGGNGNCCCCNCCTNGC  
 NAGGGNCNTNNTTGTATTAATAAAAAACGCAGGNAGNTNGGACNNNNTANNCTANCGNANANANNT  
 CNTNACTCGGNAACCNTAANNNTGNACAGNTCAGGNGNATTNNTAGNNCTGNNANTNCNTGGNANNA  
 NNCANANNNTAAANTNCCNNNNNGNNNNNNNGNNNGTNTTNNCTCTAATTCNAACNNACCGGNGGNA  
 30 NTTNNNGTGGNNAGAGNCNNNTGACNCNNGNNTTNTCTATNTATNNGNGNTGTGNANANATGNGAGA  
 CGNGNNCATNGNGANNNGGTNANACNGGTNNAATTNNCNTTTCCNANGACNANNCTNCCNGCCNAN  
 GNTTTNGANNAAGCCATANTCCNNNNCACNTACCANCCTTNTCTACAANNNTNAATAACGNCNTGCCANA  
 ACTNNCNNGGANTNNNNNTNNGGCNCNAANCCCNANACNANCCCGGNTTANGGTTNNATANGGGCT  
 CGNGGNACNGNTNTAANTTATAATNATTTACTNAAAGACACCAGTNNNCNATNGACNNGTGNTCAG  
 35 NNNAGTNGGNTGANNGTTNNTNANTNCGNCAGATCCNNNTNTTNCGANAANNACTANGAGATNAGGN  
 GAGTNGCNCNCGGGGNTTCAAANTTTGGATGTTTNGGCNAGACGATNNTNTNTNCNGGNGACANACT  
 ATNNTACTNGTNGTGNCNNGGANNNNGGCACNCTTGTNTANNGTNATNNCTANNAGTAGTGAAGACNN  
 CGTCACNTAGANTANGATTGGANGNGATNNTNCTCANTATGAGAGTAGACAATGNANNGNCANGANG  
 NTTNCNGTTTANNTAGNGGNTANTNNNNNCNNNTNTGAGANTNNTNAGNACTCGNNAGCTNTGTANN  
 40 NANTGCTTATGCCNCNAAACAANAACNTGGNNCTGAGANTGGNCNTGGNGGNNTCNTNNTGAANTAA  
 TACGCAGGAAGANCCG

TTNNNNAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGG  
 CAGGATCAAGCGATTCTTGCCAAAGAAACAAAAGCAGAATCGTCCCATTCCTCAATGGATTCTGAATGA  
 45 AAAGTGGCAATAAAATCAGGTACAACTCCAAGAGAAGACNTTGGANAANANCCAAGCTGGGTCTATA  
 AAAANCANGCTGGGTCTATGAAAAGNGGTCTTANCATGTAAACCANTTTTTTAANCAGCCANATCNCA  
 NNGAAANCNTCNNTACNGTANNGCTNNGGCCANGANGTNNTTTNTNNTNTCAGNCNGNAACCCAN  
 CATTAANTNTAAANCCTNGCAAAAAAAAAAAAAAAAAANNTGGGGGGGGNCCGGGNCCTAATTCCC  
 50 CTTNAGGGGGGNCGTTNAAAAANNN  
 NNN  
 NNN  
 NNN  
 55 NNN  
 NNN  
 NNN



CAGTACATNTACAAAAGGAAAAAGTGATGGCATCTACATNATAAATCTGAAGAGGACGTGGGAGAAGC  
 TTCTGTNGGCCGTTCCGNCCATTGCNGCCATTGAAAACCCGGCTGATNTCAGTGTTCATATCCTCNAGG  
 AATACTGGCCAGCGAGCTGTGCTGAAGTTTGCTGCTGCCACTGGAGCCACTCCTATCGNTGGCCGCTTC  
 ACTCCGGGAACCTTNACTAACCAGATCCAGGCCGNATTNCGGGANCCAAGGCTTNGGNGGTACCCG  
 5 ATCCANGGCTGACCAACCAGNCCCTCACGGAAGCCTCTTACNTNAACCTGCNAACCATTGCCNTGTGN  
 AACACNGACTCTCCTGTGCGCTACNTGGACATTGCCATCCCGTGCANCATCAAGGGAGCGCACTCAGT  
 GGGTCTGATGTGGTGGATGCTCGCCNNGGAAGTTCTGCGCATGCGTGGCANCATCTCCCGAAAGCACC  
 CGTGGGGAGGTTCATGCCGGAATCTACTTCTACAGAGATCCTGANGAGATTGAAAATGGAAAAGCAGG  
 CNGCTGNTGANAAGCTGTGANCAANGANGAGTTTNAAGGGNGANTGGACTGCTCCAGGCTCCAGAA  
 10 TTTACGGGNTGGTTCNCCTTATGGTGGNGAACTGNNNTTAAAGCCTTGCAGGTGCCTTCCNNGCCCA  
 TTTTANCNNNTCCCCATGGAAGAACTGGNAGGGCTTAANCCTTCCATTGAAAACTGGNCTTGCGGCCC  
 CCCC GGCCNTGCNAAGGNAATNGGNTNGGAACCNCCCCCN  
  
 15 NACAAANCTGGAGCTCCCCGCGNGGGCGGCCGCTCTAGAACTAGTGGGATCCCCCGGGCTGCAGGCTT  
 CGGGGTCGGCAGCGGCAAGACTGTTTGGCCGCCTCTACAAGGTCCCGGCCNTGTTACAGTCCAGNGCC  
 AANATNGTCAAGCCCAACGGCNANAAGCCGGACNAGTTCNAGTCGGGGATCTCCAGGCCNTGCTGG  
 ANCTGGAAATGAACTCGGACCTCAAGGCGCAGCTGCGGGAGCTGAACATCACGGCCGCCANGGANAT  
 CNAANTTGGNGGGGGCCGNAAAGCTATTATTATCTTCGTCCCCGTCCCGCANCTGAAGTNTTTCAAA  
 20 AAATCCANGNGCCCCTGGTGC CGGANCTGGAAAAAAATTTAGCGGGAAGCACGTCNTCTTCATCCCC  
 CAGAGGATAATTCTNNCTACGCCNCTNAAAAAAGCCGTACGAAAAATAAGCAAAANCNTCCCAGGA  
 GCCNTTCTCTGACCGGTGTGCACGACGCCATGCTGGAGGANTTGTTCNCCAAANGAGATCGNGGGC  
 AAGAAGATCCGANTGAAGCTGGACGGCAGCCCACTNATAAAGGTCCNTCTGGACAAAGCTCAACANA  
 ACAACGTGGAAGCGCAAGGATGAAACGTTTTTGGTGTNNANAAACANACTCNCNGGGCANGGGATG  
 25 TTTATTTTGAATTCCTCCGAGTTTTAGNTGGNAANCCACACCAACTAAATTTTATTTTCTTCNNN  
 NNN  
 TTTNNNTTTNTNGNGGGGAANNNNNNNTNAAANNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
 NNN  
 NNTN  
 30 NNNNC  
  
 NNNNATCTGGAGCTCCACCNCGGGNGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAA  
 TTCCGGCACGAGGTTAGCAAGAAAGCTGAACGTCCGTGGGAACAAGGGAAGAANGAATCCGANCAAG  
 35 GCTTGANGANANGAAGANGGATGGGACAAGAAAATAANGTCCNANTTTGGNGNCGAACCCNTTCTN  
 GGCCNNNNCTNGNTNGNTGNNANGGTNGNGNTNGGGAANGGGGNGCCCCTTTNCCNNCNCATTG  
 CCNACTTGGCTNGCNATGNTNANGNCATNCTNCCNNTTCCNGNTTTAATNGNATNAACNGNGGNTT  
 TATNCNNGCNACNANCNNGNCCTNCCNGAATTTANNANCCNTTCTNGTGGGNGCCAAAAACNTTCNGG  
 ANGNCNTNCCCNTTNGAACNAAAGTTTACCACAACCNGAAGAATGTGCATNAAGGAGAAATATGGGA  
 40 AGGATGCCANCAACNTGGGAGATGAGAGGCGNGCTTTGCCCCCANCATCTCTGTGAGAAACAANAA  
 ACCCTGTAGCGTNGTGAAAAAATNCGCATNTNGNAAAAGCTGTNGTANACACGACACAAGTGCGCC  
 ATNTNCATNNGACNCAANNCTGNCCTCTTGNGNTTNTACACNNGTGGCANNTATTGACACTGTACTNT  
 TNGTCGCCCCNTGACCCCAACCCANGTNCATNCTTACCCCGACGAAGATGNTGCAACCTGTAGAANN  
 NGCCTTNTTCATGGGACCTACNNCACTGGTNGTNTATNTTAGGACCCCTTNTAACCNACGANTGAN  
 45 CTNGGGAAGACTTTNTNCAGAAANTTCATCTTGCNCCNCCC GCCAGGGNATTCNANGTNGGNTGG  
 GGGGGGATTGAACCTCCCCCGGNGGACCCAANCCCCCNCNANGGGTTTCTNTCCANANGGNCNG  
 CNAAGCANAANAAAAATCTTTGNNNNANCTTNTCNTCTTGCTNGGANNAGTTNTNCNCCACAATT  
 TGGTNTTNTNTNANCCNNACGCCN  
  
 50 TTNAGCNTACTGGAGCTCCACCNCNGNGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
 ATTCCGCACGAGGCTAGAGAGGGGTCCATACGGCGTTGTCTTGAATTCCTGTCGTAACCTAANGGGAA  
 GCTTTNACAATGNCCGNANCCNTTGTGTCTNTNAAANGAAGGAGNAGNATGTCNTNAANTTCNTTGC  
 ANNAGNANCCNNTTAAGGGGNNCCNANCNTNNNTNCNAANNNGNACNATNCNTTNTCCAAAGGNAA  
 55 ANGGNNGGGNTTTNCTTANNAATTTNAANAAGNCCNNGGAAAAACNTCTGGTGGGCCGTTTCGCCCN  
 TTGCGCCNTTNAAACCCGGGTNNATGTCATGGCATATATCTCTCAGGAATANNGGGCACACGAGCTG

TGCTGANAAATTTGGNGTGNTGCCATGTGAGNNCCACTCTNTATCNGTGGCCGTTTNCNCTCGGAAACN  
 TTTCTATAACCCANANCCGNNCCCNNTTNCNGAGNNCNAGNNTTTGNNGGGGCACNCATANCAGNGGTGA  
 ACACCAANCCCTCNCAGGGNAANCCTTTTTANGNAACCTCCCCACTTTTGCTGTGGACACAGACTCTT  
 CTTTTNTGTCTAGGGGAATTTTCATCCNCCGGNAACAACAAAGGGNGCGNCCCCTCGGGGGCTTCTG  
 5 ATGTGGAGGNTTCTCCCCCGANAAACTNCTCTTCTGCGGNCCACTTCCCAANAAAAACCCCCGGGNG  
 GACGTTCTGCCCCCTCTTTTTNTTCNAAAANNNTTTCNGAAGNATNANTTAAGGAAGGAACNAGCCC  
 NCCANCTTNNTAAAGGATTTTTNCCAACCCAAGGAANAANNTNNGGGGGGGTGGAAANNGCCTCCCTC  
 CCCCCACNANAAATNGANNNGGNTGNCCCCNNCNGNGGGGGCCTNACTTTTNAAGGAAGGCCNNG  
 GNNNTTTCCTTTCCCAANN CN  
 10  
 TTNAGCNTACTGGAGCTCCACCNCNGNGGGCGGCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
 ATTCGGCACGAGGCTAGAGAGGGGTCCATACGGCGTTGTCTTGAATTCCCGTCGTAACCTTAANGGGAA  
 GCTTINACAATGNCCGNANCCNTTGTGTCTNTNAAANGAAGGAGNAGNATGTCNTNAANTTTCNTTGC  
 15 ANNAGNANCCNNTTAAGGGGNNCCNANCNTNNNNNTNCNAANNNGNACNATNCNTTTNCCAAAGGNAA  
 ANGGNNGGGNTTTNNCTTANNAATTTNAANAAGNCCNNGGAAAAACNTCTGGTGGGGCCGTTCCGCCN  
 TTGCGCCNTTNAAACCCGGGTNNATGTCATGGCATATATCTCTCAGGAATANNGGGCACACGAGCTG  
 TGCTGANAAATTTGGNGTGNTGCCATGTGAGNNCCACTCTNTATCNGTGGCCGTTTNCNCTCGGAAACN  
 TTTCTATAACCCANANCCGNNCCCNNTTNCNGAGNNCNAGNNTTTGNNGGGGCACNCATANCAGNGGTGA  
 20 ACACCAANCCCTCNCAGGGNAANCCTTTTTANGNAACCTCCCCACTTTTGCTGTGGACACAGACTCTT  
 CTTTTNTGTCTAGGGGAATTTTCATCCNCCGGNAACAACAAAGGGNGCGNCCCCTCGGGGGCTTCTG  
 ATGTGGAGGNTTCTCCCCCGANAAACTNCTCTTCTGCGGNCCACTTCCCAANAAAAACCCCCGGGNG  
 GACGTTCTGCCCCCTCTTTTTNTTCNAAAANNNTTTCNGAAGNATNANTTAAGGAAGGAACNAGCCC  
 NCCANCTTNNTAAAGGATTTTTNCCAACCCAAGGAANAANNTNNGGGGGGGTGGAAANNGCCTCCCTC  
 25 CCCCCACNANAAATNGANNNGGNTGNCCCCNNCNGNGGGGGCCTNACTTTTNAAGGAAGGCCNNG  
 GNNNTTTCCTTTCCCAANN CN  
 TNNNAAAAAGCTGGAGCTCCACCGCGGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
 GGAATTCGGCACGAGGCTTGCAATTCAGTATAACACAAATGTATTCCAGTCGAAAGTTCAGTAAGGGC  
 TTTGAGAGTAGCAACCAAGAGGTGGAGAGAACAGAGGCTGTTTTATGATTNGCCAANATATCCAGTCT  
 CCTNTTTATTNGATTAGNAAAAATATCTTTGNGTNGAATTCAGGGTCAGTTTTGATCCTGTNCTGCANN  
 AATCTCCANTCAGTAAATNATTTTCAGNCANNANCNGAACCNCTNTTANNGAAAANCTANTTACCACCC  
 35 TNTCANACCANAANTCNCAGGNCNTANCAAAAANCNCAGCNTATTTNGCCGGNNGAAATCTNGCT  
 GGGCCNTCTTTAAGAATCCNGNCAACACAAANCACTTTTNTCTCNGGGNCTCTTTAANAGATTTATTAT  
 TAGTATGACCNCNTCTAGGCAGTTGNGTNCNTNCTTNCNCGCCCACTCAGCACACACACGTCCTNTCCTT  
 AAGGAAGCCAANACTTCAGGGAACCTNTNTTCAAAAAACAACTAAGGCTNTNTGATTTACAGGATGA  
 TGCTGTAAAAAGTCACAACGTANCCNTTGGTTGTTGACANCCTGGAGTAGGGGCAAAAAATNCCCCNCC  
 TTTAANGGAGGNCNAACTTTGGTTTTATNTTGGAAAAATTNNGGGGACAAATTTAGNTTTTTTGGNA  
 40 AACAACTNTTTAAANCCCTGGCCTCACCTTTGGGGGGGGTCCCGNTTAANAAGGAGCCCCCAAT  
 CTTTTAAACNNGGGTTTTTNAAAAACCAGGAGGTTTGGNGGGCCCCAAATTGAAAGGGGGNCCCNCCG  
 GAAGGGGTTCCTCCTTCNGCCGGGGGAACCCAAAANCCCCNAAAGGGGTTNAAAAANGGGTTTTT  
 GGGTTNN  
 45  
 TTGGANACNATNTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GAAAAATTGNAAACNATGNTTCATCGACCTTCAGCCCCATCAAACATTTTCATCATGATGAAATTTTCG  
 GTTCCCTCCTGGGAATCTGCCTAATCCTACAAATCCTCAGAGCCTATTCTAGCAATACACTACACAT  
 CCGACACAACAACAGCATTCTCCTCTGTTACCCATATCTGCCGAGACGTGAACTACGGCTGAATCATC  
 50 CGATACATACACGCAACGGAGCTCAATGTTTTTATCTGCTTATATATGCACGTAGGACGAGGCTTA  
 TATTACGGGTCTTACACTTTTCTAGAAACATGAAATATTGGAGTAATCCTTCTGCTCACAGTAATAGCC  
 ACAGCATTTATAGGATACGTCCTACCATGAGGACAAATATCATTCTGAGGAGCAACAGTCATCACCAA  
 CCTCTTATCAGCAATCCCATACATCGGCACAAATTTAGTCGAATGAATCTGAGGCGGATTCTCAGTAN  
 ACAAAGCAACCCTTACCCGATTCTTCGNTTTCATTTTATCCTTCCATTAAATNATCATAGCAATNGCCA  
 55 TAGTCCACCTACTATTCTCCACGAAACAGGGTTCCAACAAACCCAACAGGGAATTTNCTTCANACGT  
 ANACAAAATCCCCNTTCCCCCCTACTTTNCCCNNTAAGGGACATNTTANGGGGCCCTTTTACTAAA



TTCTAAGCTTTTAAAAACCTACTAAGGANCTATTTCGCACCCCGACCTTCTTNGGGANACCCCANATAACT  
TCCCCCAGCCAAATCCAATTTAAANAAACCCCCCTTNAATTTAAACCCGGAGNGGAAACNTTTTT  
TNTTTGGGATACCCCAAATTTTACNAAANAATTCCCCAACNAACTTNGGGNGGGNGGTCCTTNC  
CCCTAACCTTT

5

TTGAANACAGCTGGAGCTCCACCGCGGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
GTTTTAAATCAAGTCAACNACTTTTCAAAGTAAAGAGTTACACAACTACGNTCATGAATTTTTTAATC  
CCGTTGGAAACATATAACCAGGAGTGTTCAGTATACTGGAATACAGGCACACTACCATTTCATGGTATG  
10 AATNCTGGGGTTTACACAACCAGTTTCGATGCNATCTGCTCGTNCNTATACTGGNGNCNTTNTTNTNGA  
ANTATAATTTNCNTNCNTGTGANGNCTTGNNNTTGTNCNTACCGCTTTTGCCGATATTTTCTCCGCTCT  
GNNATTTCCNCNNNTTNGNNGNGNNTNCNTNGCAGTGTCTTTGANTAACTGCAAGGNTCCNTNT  
GTNGNCNCNCGANAAACNNAACAANNTTTCGGGGGGGGCGNGCCCCCCCCCTCNTNTCTTCCCCNCN  
CNGNGGGGGNCCGNATTAAAAAATCNCNCCCCCTCCCGCCTNCTNCNTNTCTTTTTCNNTNCTNGCCG  
15 TCGNCTNAGCNCCATGNNGCATTGNCNNTNCGCGTTNCTCCCTNCNTGCNGANGCTACNNTCCGTCT  
NTNTNGTNGGCGNTGNTTNTGTNCNNTNTCTNCNTNNTCTGANCNTNCNNTNNAACCCCNCCGCNC  
NTCNCCTCCCGCTCCNCNTTCNCCCNCCNGCCTTTNCCCTCNTNNTTNTTGTGTCGTCATCTCT  
TNCCGNTNCTCTNTNTNCNCTGCCNCTNTNNTNCGACGNATGNCNNTCTGTGCCNNGNNGCNGGCC  
TCCNTCGCNTCNCNNTCCTCNCNCCGNCNNGCNGNCGNCNCCNTCTNCNACATGNTGTGTCN  
20 NNGNTCCTNTTGCNCNCTCNCGNCGCTNCGGCGGGCGCTGTGCTCGCGCTGCCACTGCGNACC  
TCNTNCNNTTCCANCNGCNGNANCNCTCTTTTTGTCCGNTCNGCGCGNNTCGNTNTTCGTAGC  
NNNCNACNGCGTGTGCGCCGTANNTNTTGNCGCNCNCGTGCNCTNCTNNGGCC

25 ANCNCACTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAAT  
TCGGCACGAGGGTGAGANTNNAGATGNGNANGCTTGGNANCAACNTTTNANGCTCCCGTTCATTCTG  
NNATCCTNAANANATGGANNTAACTGNCCTACCTTANCANGCNTGANAGTNTCTGGANNNTGCTACAT  
GTGGTNCCNACCCCNANGNNNTTAGAANTCTTTAGNCATTGACTTCTTACTGTTATAGGGCCNNT  
30 ACATNTAAGANAGCNTGTTNCGCCNANAATATNTATTTGCANTTTTGTCAACAACAACAAAAAGCTC  
AGCGGTNCCTTCTTCATGNTTGGAGTGTGTGGTAGCAATGCATCAAGCTCAGCTCATTTCCAAGATTC  
CACATATCTTGAAGGAGATGTATGACGCAGACCTTTTGGAGGAAGAGGTGTCATTAGCTGGTCGGAA  
AAGACCTCTAAGAAATATGTCTCAAAAGAGCTTGCCAAAGAGATTTCGTGTCAAAGCGGAACCTTTTAT  
AAAATGGTTGAAGGAAGCAGAGGAAGAATCTTCCGGTGGTGAAGATGATGATGAAGATGAGAATATT  
GAGGTGGTGTATTCAAAGACTGCCNCCCCCCCCNAAAGTTGAAAGCTGTAAAGTCTGACAACCAAAG  
35 ATGATGACNTTTGATATTGGATGNCNNTTNAAGGGGGGGGGGTGCCACCCCAACCTTAAACAANNG  
NAATNGCTTGAAAAATNTTTTTTGCATTCAATTTGGGCCAAAAAGTGCCAACCATGGAAATGGGGCC  
AAAAAGCCTTAAAAATNGGGNTTNAACATTNAATGCCTTACACNTTTTTTTAACTTNAAAAAAATGG  
TATTGGCTTGGGGAAAGGGGGCCCTGGTTTTTTTAAANCCCCAACCAAGAAAANTTTTTNGGGGGG  
GTCCNTCC

40 NTCCTTNNCATTNTTTATNNNANNNNTTTNTNNTCNCNCCNCCNCTNTTTTTNNTNCCNCCNCCCCNNT  
NGNCCANNGNNNTTTTATTGGTTTCTATCTTTNAGCCNNTAGGANNGCANACAGTGGCGGCCGCTCT  
AGAACTAGTGGATCCCCCGGGCTGCAGGGGTATGATCCGCANNGTNACTNCCAGGAGGCCGCGGCC  
45 AGTGCTAAGGAGGCAGGTGAAGCGGCCAAAGCCAGGCGCTGTGAGCGCGGCCTGAAGACACTGGAGT  
CCCAGCTGGCTGCTGTGAGGAAAGGCAAAAGATCAGTGAGGATGAGATCCCGCCTCCAGTGGCCTT  
GGGCAGGAGGCCCTGGTCCCCCAGGAAACAACTAACAAGAGCCCTGAAGCAGAACCCCANCTGCC  
CCCTCCGTGGAGCCAGATAACCCCTCCNAGCCTGANACAAGCCTCTTGGGCATCCCTGGGAATTTCTGC  
CCCACCCGACNTCANACCCGGACCCACGGGCCCTGCTGCTAGGCCCGGCNATAGAGTACAAAGTGG  
50 CTGCTCTNAATGCCAAGCGTGTGGAGACCTANACCGTGCCCCGAGAGCTTATGAAGGGTTTGTGAAGA  
GATTGTGCTGTCTTGGANGCCCTTGGANAANTGGGNCAGCCTTGTGGNCCTNNAATNGCTCATGCC  
CCCCNTNNTCCANANNACNNTGGAAGCCCCCTTCTCANANGGCTTGNTCCANAGCCCCCNNTAGC  
NCCCCCTCCCGATGGCACCCCTNTNGNANNTNGNANCGGANATGCNACCCACAATNNAATTGGGCTCT  
TTNTACAATCNCCTATCANNGNCCCGGTANGGCCCCCTANNGCTTGATTACNTCCANGAACAAN  
55 TGGCCTTGTGTAATNCCCNNTNNCANNCTANNANTGGCTTGGATCCAANANTNCCACGCCGNATNGG  
CNANNGTCTCNCCTANNGCNTCCNTGTNGGCAAATTTGGGNGNATATATNACCNNCNATAGAGCCC



CCNNNNANNTNCCACNCNTATNCTCNTNTTTTTGGNNCANNTACNTATNTAANTTCAAANANANNGGCC  
ATTTTTNCTNNTCCNCNCNCATGGNNCTGTGAGANCNNNCAAATANTTTGTACTCTNTTGACCGCGG  
NGTCTANCCCTCNGGTANACTTTCTNNNNANATTTATTCATCCNCTATNTACACNTTGGNTCTNNTGGG  
NAGACACNCANNCNCGTNNGGTCTTATCNTNGANAGNNNNNCNATGTNTGAAATGTGATGNTCTCTN  
5 CTCTTATACANGACTNTCTNNACCTNNCAATATACNCTCTGTCNCCC

AAANCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGATTNCG  
GCACCGAGGNNCCTGTNTNGNNTTCNCAGANTTGGACTNGGNCNCNGGNNNGGNNNNATGAANANCG  
10 NTATTCANACTTNNCTGCCNNTAGTCAANNNACTTTATAGGGACCNAACGTATGCCCTAATANAANA  
TNCTTTACNAACCATTTAANCTGCTATTNCTTGATTTAAAATGGGNNCGCAAAAANCCNGTTTGTAACNT  
GTTCTTGTGCCAGTGGCTNANATGACCAGACTCCCATNCGCCTCCAGNTTATACCTTACCTNCCNNTA  
NAAGAGAAGACCNNCNGAACNCNATGATTTTNTCTTNAGACTNNCGNTCTCNATAAAGANCNNNCN  
GATATTANCNTNTTCATTGCNCACAAAACAANCTTTGNAANANACAAGGCTTCCACNCNCCCCNCCAA  
15 ATACTAATGGNGCAGNCCTAACNCTGTGNTTTTGATGTTNCNGNCTACCCNTNAANGAGCGGGGTGTNG  
ANCTTCTGTTNGCNGGGATCCACCCGNCATNNAACTGGCGGGTGATTNATTTNNTTTACTGCCNATC  
NTTCCAATGCTGGAATCCAAGCTGNNATNCCTNGATTGCNNACAAAATGGTATNNTTGAACCTCCGCTC  
GTTTGNTTTTTCTTCATTGAANGGNACCCNTGGCCTTNGTTNGGNTTGCCCCCTTTGAANNTCTCAAN  
CCCGNNCNTTTNTNGGTTACCCCTTNGGGCAAAGGGGAAANNGGTTTCCCTTNCCTTCANTTGTTCANGG  
20 NTNTTNTANNNNNCNTGGTACNTTGTNTNTCNAAAAACCCNGNTTNNCNGNNTTTCNTCTTAAAAA  
ATAAAAAAACNNTNNTCTATTNTNTGANGGGNTCNCANTCCCTTNAATTNTNTANGNAAAAACNATA  
ANTNTNANACNTNCCNNNACTNTCNGTNTNNNNNNNTNAAANTATTNTANANAANATTTNCTNCT  
NTNTTC

CAAAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGGAA  
TTTGAGGATTCCTTCCATCTTCAGGCACTTAAGCTGGTCTCAACNCCTGGTCCCGGGGGGGCAGGGCCC  
TCCTTTGNNAAGGGTTTCNAGAANCTGGANGGAAAGGGGGACCAGNCAGGNCAAATGGGGTNGNNG  
30 GCCNCCNNNCCANTNAAANANCANCAACCNGTNANCGTGNNAACCAAAGGNNGGNNTTTGGGAAN  
NNTTGNNTCCCANNTGNAAANTAACNGCTTCCTTCCCTTNCACNTTNAAAANTCANNAACNTGNAAG  
AAAANCATNTGCNAATTCTTTCNNGGTGGAACNGACCGGCNTGATATATCCNGACACGAATATGCNCN  
CTGTGACNTTAAAGTAAGGGCNATATATCTTTGACANGTCCCAAAGCACATGCACACTCTGTNNAAG  
TNNTGGAAAAGANNTTTTCTTTCTACTCTTGTGGAGANAATTACTCNNGAANTTANATNGGGNAAGGG  
NCCCTNGCCTTNTCTCACTCTNATTTTCTTATNCCCCCTNTCCTTCTGAAATGTGTTAACTCATTTACGC  
35 NATGGTGGGGAAATGCNCTCTCCACCNTCATTNCTTGGCCTCCNCANCAAAAATCAGNGCCNCTGATN  
GTCTTTTTTGGGCTTCCCCCTCCTTANGGGCCTTTTCTGCNCANGAAGNCCCCACACCCNAACCTTTT  
GCTTTTGTCACTGCTGGGGGTCAAATTTGATNGGGACCAGATCTTTTGTGCCNCNCAGGAAATTTT  
TTTTTTTTTTTANAAAAATCCTTTANGGGGAAAAAATCCTANTGAAACCTGNGGGGGCGTNTNTTTG  
CGGTGGCCAACANNAAAANTNACANNACNCGCCCCANGGAGCCNTGAAATCTTGGTTCCCTGNA  
40 AAAAN

TTGAGCCTATATGGAGNTGTATTACAGGGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGG  
NNTCCATCTGTACNTGAGCCATGATGACCTGGNAGCGTCTGGGGGCCCCGGGAAAGGGGNAGGGTTN  
45 GGCCCCAAACTTGGCTTCGGGGGAAGGACNCGGAAACCTTATGGGGANAACATTGGNCCATCNTTG  
GACTGNTTTTGNCTTTCGANCAAGCACCCCCAAATTCGGTGGNGGCAAAAANTTTGGGGNCCCAGGACT  
TCCCCNNGCNTTTCANGGNTGTGAAAANCATTGCTTGGCCCTNNTGCTGACNGCAAATGAGCANAA  
GGGCCGGAATTATCCTNGACNANGTTNCTNNACNTGACTNGGCCACAACCCTCGGGGCATTTTCCAC  
CTGNCCCNNTTANGAGGACACCTATNTTGGAGGTGATCTTTGGAGCACGAAAGNGCAGNTTTCGAANC  
50 CACATGNNCTTTTTCTAANGNCCACTTGNAGACACCCTTTTGNANAGCNAAAAAAGTGAAAANGGCACC  
CANTCCCNCCCCTGGTGGTTNTTNCGTNGGGGGGAAGGGGGTNTATTATTNAAACNGGCCAANGTG  
GCTTTTGGCCACCCCNNTTATTNACAANGACTGTCCGCAAAATNGGGCCCCCAAGGGGTNGCNTTG  
TTTCCACAACCTTACGCCCTTCNNGCCCCCNGNNTNGTTACNCGNNGCCTAACACCCNNAACCCCCC  
GAANAANNANCCCCCCCCCGGGANANNGTNCCAACAATTCTCTTNTGGGCNNGGTTTTTTACCTNNT  
55 TTNTTTCGGAATNNTAACNNANCCTTTTTACCCCAAGGTTTTNCCNANTTNAGGGAANCCCTAANG  
GAGNAAANAACNTCNNCCTAANGGAAGTTTTTACCCCGGAANNTNGNNTNGGAAACCCCTTNTATTA





AAATCTCATTACCCTCAAGGTCTTCACAGTGATCCAGTGTCTGAACCATTGCCTGAGCAATAGAATA  
 ACTGTGCTTTTGAAGTAATGTCTGACTCTGAAGGCAGCACCTGACCGCTCCCCGCGTGCTGGGCTGGT  
 CGTGCCGATACTCTGGGCTCCCAGTTGCTGCTTCTCAGATATACCTCTTGCCCGACTGCCGCTCCTCA  
 5 GTCCACCTCATCCACTCAACCATGCCCCACAGACATCTTAGGTAGAGGCAGGAGAAGCCAAGGCGTAT  
 GCACAGCTGCCCAGTGACTGCGCAAAAGAACTCACACTGGTGGCTGAGGCTGGAAGGACACCAAGAG  
 TCNNCTTTTACCACAGGTCACCAAGTGTGATGACAATATTCCAGGCTTGACGTGGGAAGAGACAGCCN  
 ANCTCAGACTTAACTAAATGCGTGGGGCTGTATTTTAACTGAGGCTGCTCNGAAGGTGGNTCAC  
 NACTTTAGAAAAAGGAAAGCGACCCTGATGTTCCTAATTAACCACCATNCANTAGGGGGANGCCAA  
 10 ATACANCTTTGAATTGGCTTAACTGGAGGAAGGCANCCCCAGGANTTTTTNTTCTTNGCCCCANCA  
 CNTTTTTTGATTTCCCANCAAANTNCCTAATTTGAANTTTTTTAACTTCAAAAAGGCCNANGGCCTTTT  
 NGGCTTTTNNAAAAANATGGAAAAAAAAGGGNATTTTTTCCCCCTTTATNGCAANGCGGAAAGGGGCN  
 ANTAACCCNGAANNNGGAAAAAANAACCTTCNNACCANGCCCCGGGAATTTTCCACCNTTTCT  
  
 15 ANNNCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTGCAGGCTCTTT  
 TTTCTAGTCTTCTTCCCTGTAGGCAGTTTATAGGTGGAGTCAGGGGACAGGCAGCTTTCTGCTGAGGGAC  
 ATGACACGTCCGTTTCCAANACAGAAAGTGGTTGGCAGAAGGTGTAAACCTGAAGTCCCAGTCCCCG  
 AAATCTCATTACCCTCAAGGTCTTCACAGTGATCCAGTGTCTGAACCATTGCCTGAGCAATAGAATA  
 ACTGTGCTTTTGAAGTAATGTCTGACTCTGAAGGCAGCACCTGACCGCTCCCCGCGTGCTGGGCTGGT  
 20 CGTGCCGATACTCTGGGCTCCCAGTTGCTGCTTCTCAGATATACCTCTTGCCCGACTGCCGCTCCTCA  
 GTCCACCTCATCCACTCAACCATGCCCCACAGACATCTTAGGTAGAGGCAGGAGAAGCCAAGGCGTAT  
 GCACAGCTGCCCAGTGACTGCGCAAAAGAACTCACACTGGTGGCTGAGGCTGGAAGGACACCAAGAG  
 TCNNCTTTTACCACAGGTCACCAAGTGTGATGACAATATTCCAGGCTTGACGTGGGAAGAGACAGCCN  
 ANCTCAGACTTAACTAAATGCGTGGGGCTGTATTTTAACTGAGGCTGCTCNGAAGGTGGNTCAC  
 25 NACTTTAGAAAAAGGAAAGCGACCCTGATGTTCCTAATTAACCACCATNCANTAGGGGGANGCCAA  
 ATACANCTTTGAATTGGCTTAACTGGAGGAAGGCANCCCCAGGANTTTTTNTTCTTNGCCCCANCA  
 CNTTTTTTGATTTCCCANCAAANTNCCTAATTTGAANTTTTTTAACTTCAAAAAGGCCNANGGCCTTTT  
 NGGCTTTTNNAAAAANATGGAAAAAAAAGGGNATTTTTTCCCCCTTTATNGCAANGCGGAAAGGGGCN  
 ANTAACCCNGAANNNGGAAAAAANAACCTTCNNACCANGCCCCGGGAATTTTCCACCNTTTCT  
 30  
 TTTGAGNCCNATANGGGAGNTGTATTACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTG  
 CAGGAANTTCNGCNCGAGGCTNTTNNNGGTGTNCCCANACCGCCNTTTNCCTTAAACCTCNGGAGGN  
 CCCGCANNGTTAANAGGGGAAATCATTACCNCCATGAGACAGGGGTNGNNCCCNAGANTCGTNNTGG  
 35 GGCCAGNTCCACTTGACACCTTTGTATGNGGNANACACTTTTTTNCANTGNAGGTANACTNTAAACG  
 GACTTATACTTGNCTCTTNANANAACTANGGACTTTCCCAAATTNAATACNCACTNNGNACTCCNA  
 CAACTCTATTGANCAAGNCAATGNATGANNCTNAACGANTTCATAANAGATGANAGAACCANNGCAC  
 CCCTTNGNNGAATCNTTNTTGGTNTNCACAGAAANTNNCTNATNNNACTNTCATCTATNGNNAAC  
 CTNCNAGTGTGCGCTCGGGANTTGTAGTCNNCCCANATACNNNNATNNGTGCTTTCAGGAAAAACCTN  
 40 TGNCNCTNNATCTTNTCTNCTANATAAANCAACNTCTNGCCCCCTCCTTCTNANAAANATTAATCTT  
 NATTCACCTGCCCTTAAANTCTTNGNCGATNCCNAGATGCNNTTTGACTTGGTTTTGTNGAANGA  
 NANANANNCTTNANTTCTGGCTNCCACCCGCCCCNATTGNNTTNNNNAAGNAAANTCCACNTTCAN  
 TTTATANACCTTCTTGAANCCTTGATACCNTCGATCAATNCTNTTTGTGGCGTTGGGGGCAATCNATNT  
 CCTNTTTCCNTTNTCTTACAATTTTAACTTTNTNNNNANTCCTCGCGANNCCNCTANANTTTNTTTA  
 45 GTGNNNNACTTTACAGNGNNGGCNCCAATTGTCNCTNAGTNTTCTTACCTCTGGTCCAANATT  
 CNANTTGTANCGATNTTTGTANCCAACCNATTTTTNTCTCCANAANNCTTATCNCATACTTGTAATTNT  
 TTNCNNTGGATGNCGTGNNNGTTTTNCACTCTTTAANAAANANTCNNCCNATAGATNNGTNNCTAG  
 CGGAANTCNTCTNTTTNCTTCTNNCAATNNNTATTATAACGTTCTTANTNAAACNATNCNCTTCTANT  
 ATTCTTTAATGGCGNNTATNAANTTGNNTNTTGGTTTCNCCNNGTCNTTCTNTTGNCAAGTNCNGNGGA  
 50 CTCNNCCCTCCTNTTCCNNTATNTTAACTTAAATNTNNNTTTTGCNAGNNNTGCGTNTTATNCA  
 TCTCCTCTGTNGNACACNNCCC  
  
 TTTGAGNCCNATANGGGAGNTGTATTACAGTGGCGGCCGCTCTAGAACTAGTGGATCCCCGGGCTG  
 55 CAGGAANTTCNGCNCGAGGCTNTTNNNGGTGTNCCCANACCGCCNTTTNCCTTAAACCTCNGGAGGN  
 CCCGCANNGTTAANAGGGGAAATCATTACCNCCATGAGACAGGGGTNGNNCCCNAGANTCGTNNTGG

GGCCAGNTCCACTTGGACACCTTTGTATGNGGNANACACTTTTTTNCANTGNAGGTANACTNTAAACG  
 GACTTATACTTGNCTCTTNANANAACTANGGACTTTCCCAAATTNAATACNCNACTNNGNACTCCNA  
 CAAACTCTATTGANCAAGNCAATGNATGANNCTNAACGANTTCATAANAGATGANAGAACCANNGCAC  
 CCCTTNGNNGAATCNTTNNNGGTNTNCACAGAAANCTNNCTNATTNNNACTNTCATCTATNGNNAAC  
 5 CTNCNAGTGTGCGCTCGGGANTTGTAGTCNNCCCANATACNNNNATNNGTGCTTTCAGGAAAAANCCTN  
 TGCCNCTNNATCTTNTCCTNCTANATAAANCAACNTCTNGCCCCCTCCTTCTTNANAAANATTAATCTT  
 NATTCACCTGCCCTTAAAAANTCTTTNGNCNGATNCCNAGATGCNNTTTGACTTGGTTTTTGTNGAANGA  
 NANANANNNCTTNANTTCTGGCTNCCACCCGCCCCCNATTGNNTTNNNNAAAGNAAANTCCACNTTCAN  
 TTTATANACCTTCTTGAANCTTGATACCNTCGATCAATNCTNTTTGTGGCGTTGGGGGCAATCNATTNT  
 10 CCCTNTTTCCCTNTTNTCTTACAATTTTAACTTTNTNNNNANTCCTCGCGANNCCNCTANANTTTNTTTA  
 GTGNNNNACTTTACAGGNGNNGGCNCCAATTGTCNCNNTGNAGTNTTCTTNACCTCTGGTCCAANATT  
 CNANTTGTANCGATNTTTGTANCCAACCNATTTTTNTCTCCANAANNCTTATCNCATACTTGTAATTNT  
 TTNCNNTGGATGNCGTCTNNNGTTTTNCACCTCTTAAANAAANANTCNCNNATAGATNNGTNNCTAG  
 CGGAANTCNTCCTNTTNTCTTNNCAATNNNTATTATAACGTTCTTANTNAAACNATNCNCTTCTANT  
 15 ATTCTTTAATGGCGNNTATNAANTTGNNTNTTGGTTCNCCNNGTCNTTCTNTTGNACAGTNCGNNGGA  
 CTCNNCCCTCCTNTTCCNNATATNTTTAATCTTAATNTTNNNTTTTGCNAGNNNTGCGTTNTTATNNCA  
 TCTCCTCTGTNGNNACACNNCCC

TTTGAGNCCNATANGGGAGNTGTATTACAGTGGCGGCGGCTCTAGAACTAGTGGATCCCCCGGGCTG  
 CAGGAANTTCNGCNCGAGGCTNTTNNNGGTGTNCCCANACCNGCCNTTTNCCTTAAACCTCNGGAGGN  
 CCCGCANNGTTAANAGGGGAAATCATTACCNCCATGAGACAGGGGTGNGNCCCNAGANTCGTNNNGG  
 20 GGCCAGNTCCACTTGGACACCTTTGTATGNGGNANACACTTTTTTNCANTGNAGGTANACTNTAAACG  
 GACTTATACTTGNCTCTTNANANAACTANGGACTTTCCCAAATTNAATACNCNACTNNGNACTCCNA  
 CAAACTCTATTGANCAAGNCAATGNATGANNCTNAACGANTTCATAANAGATGANAGAACCANNGCAC  
 CCCTTNGNNGAATCNTTNNNGGTNTNCACAGAAANCTNNCTNATTNNNACTNTCATCTATNGNNAAC  
 CTNCNAGTGTGCGCTCGGGANTTGTAGTCNNCCCANATACNNNNATNNGTGCTTTCAGGAAAAANCCTN  
 TGCCNCTNNATCTTNTCCTNCTANATAAANCAACNTCTNGCCCCCTCCTTCTTNANAAANATTAATCTT  
 NATTCACCTGCCCTTAAAAANTCTTTNGNCNGATNCCNAGATGCNNTTTGACTTGGTTTTTGTNGAANGA  
 25 NANANANNNCTTNANTTCTGGCTNCCACCCGCCCCCNATTGNNTTNNNNAAAGNAAANTCCACNTTCAN  
 TTTATANACCTTCTTGAANCTTGATACCNTCGATCAATNCTNTTTGTGGCGTTGGGGGCAATCNATTNT  
 CCCTNTTTCCCTNTTNTCTTACAATTTTAACTTTNTNNNNANTCCTCGCGANNCCNCTANANTTTNTTTA  
 GTGNNNNACTTTACAGGNGNNGGCNCCAATTGTCNCNNTGNAGTNTTCTTNACCTCTGGTCCAANATT  
 CNANTTGTANCGATNTTTGTANCCAACCNATTTTTNTCTCCANAANNCTTATCNCATACTTGTAATTNT  
 30 TTNCNNTGGATGNCGTCTNNNGTTTTNCACCTCTTAAANAAANANTCNCNNATAGATNNGTNNCTAG  
 CGGAANTCNTCCTNTTNTCTTNNCAATNNNTATTATAACGTTCTTANTNAAACNATNCNCTTCTANT  
 ATTCTTTAATGGCGNNTATNAANTTGNNTNTTGGTTCNCCNNGTCNTTCTNTTGNACAGTNCGNNGGA  
 CTCNNCCCTCCTNTTCCNNATATNTTTAATCTTAATNTTNNNTTTTGCNAGNNNTGCGTTNTTATNNCA  
 35 TCTCCTCTGTNGNNACACNNCCC

ANACAGTTGGAGCTCCCCGCGGTGGCGGCGGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTC  
 GGCACGAGGATGGTGAAGTCCANGGNCATACTGAGAGTATTGCCATATAAATATTTACCATAGATTG  
 AGGATTGACCTAAGGGTTCTCTGTGGAGCACTCTTTTTAGTGACTCAACTCTGAACTTCAAATTCCTGA  
 45 GATCTGATGAAACATATAGTTCTCCAACCTGAAATCTGTTTTCTGTCTACATGGAAAACAAGCTATATC  
 TACACAAATGGAAGCTTATTAATTAAGTGCAGTGGTGTGCTAAACTGGCTCCATTTTACAGACAAGTTGA  
 CTCCTTTCCAAAAGAAAAGCTAAACAGAAAACCTACCCCTTATGCAGAGATGACCAGCCTCTATCAG  
 CCCTCGGACATTTGTATGTGTCTGGAGGTTCTGGGGATCACTAGTTTTTTAATTCAGAAGAAGCAGAA  
 CACATCAGCAGGGTCTCTTACCTTACTAATGAATAAACTGAGGCCCCAAAGCACCTGATTACAACCTT  
 50 TGGTAACCTTTCAAATATGCTGGTAAGTGGAATTTTGAAGAAAGAAAACAAAATCAACATGACTGCAGT  
 GCGGAGATCCGCAAACCTCCATGGGGGTTTCAAGATTATTGNACAGATGCCCCAAACTTATCCTTGGGTC  
 TTAAGTTAGGCAAACCTCATGAACAAGATATATGCATCTACATACATTTATCTAACTTGNACAGGCTATA  
 AGANAGACTGGCAACTTAAATGNATACATCCTTCTATTGGCANCCCTTGGGGTCAGCNTTCTTCNTTA  
 AAGGTTTTNTTTAANTTTAANTTTTCCCTTTTNAAAAAATNTCNTTTTTTACCTTCCCTACTTGGGGGGCCT  
 55 TTCTAAATAAACCTTTTNTTTTCAA





CGANATNTTAGATNTGNGANTTNAGANACNTGTTTCGCNTCGCGCGCTNNGATTGANTATNTNTNTN  
CC

5 AANNCTGGAGCTCCCCGCGGTGGCGGCCGCTCTAGAACTAGTGGGATCCCCCGGGCTGCAAGGGCGN  
CCGTTCTGGCCGCACTGCGCTCGCCCTGAGCTCCGGGCTCCTGCTAAGCCAGCGCCGNTGTCGCCTCCN  
TCCAGTCGCCATCATGATCATCTACCGGGACCTCATTAGCCATGACGAGATGTTCTCCGACATCTACAA  
GATCCGGGAGGTGCGGACGGGCTGTGTCTGGAGGTGGAGGGGAAGATGGTCAGTAGGACAGAGGGT  
AACATCGATGACTCGCTCATTGGGTGGAAATGCCTCCGCTGAANGCCCCGAGGGCGAAGGNNCCGAA  
10 AGCACAGTAATCANTGGTGTGATATTGTATGAACCACTTGNANGAAACCNCTTCACAAAAGA  
NNCCTACAAGAAGTACATCAAAGATTACATGAAGTCAATCAGAGGGAATCTTGAANAACAGANACCA  
GAAAGAGTNCNTCTTTTATGACNGGGGCTGCANAACAAATCAAGCACATTCCTTGCTAATTAATAAAAC  
TATCAGTTCTTTATTGGNGAAAACATTGAATNCAGATGGNATGGTTGCTCTGCTGGACTACCGNGAGG  
GATGGCCCNACCCCATATATGATTTTCTNTANGGATGGGTAAANAGANGGAAAAATGTAACNAGGNT  
15 GGCTNTTCTTTGGATCNATCCCTGTCANCATAACTGGGTGGGTNCTGGTTTTCTTCCNCCNCACCNT  
NGAATTAACAGATGGGACTGGANGNCATCTNNANCTTTTTNTTTGGNTTGAAACGTTNATTAATTG  
GGAGCGGNGNGTTTTTTTTTTTGAACAAAAACNGGGGTNNNGGGGTGGNTAAAAATAAACCCCTTT  
TAAACTCNAACAAAAACAAAAACAAAAACAAAAACAAAAACAAAAACAAAAACAAAAACAAAAAC  
20 NNNGGNANNNNNNTNNAANNNNNNNNNNNNNNN

20

ACTNGCAGAAGTGNGNCCGANGNACGACGTGACACNNNCNACNCTTGCNANCNCCCATCTGGAGCT  
GNCACTNACANTGGCAGGCCGCTCCTANNACTAGATGGCTCCCCCNNGGTCTGGCANGTAAGTNGNT  
25 NANNNGGTNTTNNGGTAGAANTCNTNCCATCNGGAGNACCACNNCCCGNGNGNNAAGTCTNNG  
CNCCNNTTNTGNTNCNNCNGNAGNNTNGTTGAGGNGCGTGNNGCGCCANTANNANNGNNNNGN  
NCGGNGGCCNNNNNAGNNGNTNTGNGNGTTNATNNNGNAGANCGGGNGGNNAGGNAANNTCANN  
NANNNGCCNTGTNNNGAGCCCNNGGNAATTNTNTCNCTAGNGCNAGTNCNGNGTTGACTTGNNT  
TNNNTNNNGATNCCCCGNCNGCGNNCNNNNNNNTCTNNNCCANNGANCTGGNNNNCGNNCACCN  
30 NAATTCNNNGNTNTNGTCGGNNNGNTCNGTGNATNTGTAGTNTNANTNNNCGGTNTNNNCGGNANG  
NCTNNGNATGNGTGGNTNNNGNTNNGANNGTCCGNNTANCGNNTGGNNCNGNGNGNNGGGCCNT  
NANNNGNCAANNNNNCNACNNNTNANAANGNNATCTNGCNANTNNANANNNNNNNGCNAANCGA  
NANNNTNTANNNNNGNNTTTNCAANGGGTNGTNNNTGTNNCGNGCCTTGNGGNNCNNCCNNTN  
TTATCNNNNNCNCTAANNATCNTGNNNTGTNTNCTANNNGTNGNNGNNGTGCNTGCCNNTNTTCTN  
35 NTGTCNNGTNGTACNACGGCTGNGNGCNAGNNNNCNNNGCNCNCTNNANGATCTGTAGNCANCNCAN  
GCNATTNCGNNNANTCATACTNCTACTTACTACCTCGTTNAGNNCNCNCAAGTCTACATNTGNNT  
GGNACAATCCNCTGTNCTANGGNCGAGGCGCTTACTTACNNAAGTTTNNAGTAGNNTCNANTCANG  
AGGACGANTGCNTTACNNACTCNCNCGCNCNGCCGNANCTNCANNNGCANCNAGTNTGTNTTATTA  
NNNGTNTTNGCNAGANTNNGANANACNGNANTNGNGTTGTNCGCGCNCCTCNACNNCNCCTGCCNCA  
40 NCCGANNACGNCNNNGNCCNGGTGTCCNGGTGANCNNAACNNNAGANANAGNTCNCNCGANN  
NANNGAATANNTCAGCAGTGACCANNGCATGNCGCGCANATANACNCGACTNCGNTCNGTGCGAC  
NANTGTNTNATNANAGNCGATCGCGTNCGCGCCCGCNGANACTCNCNTGNNNTTNTGNTATCNCGA  
NCANATNCANGCNCNCGCGCCC

40

45 TTNAGCCNATNNGGAGCNGCANNNCNGTGGCGGCCGCTCTAGAACTAGTGGGATCCCCCNNGGTGGA  
NGNANTNNGGCACGAGGCAGAAAGTTGTGGGAGTTANCAGAAAAAAGGTGNCCAGCCCACAAACA  
TAAAGNGNTCACTATGTGAGCCTTCANANAGNGNTCACTGATCCNTGCTCTAAATGGGCCTCATTCTG  
GGGCTCGAGCTGACCAAGCGGATATCACCTANGGNGGGGCTGNTCATTANGGAAATGAAAAAGTAG  
GACAAGNCACTTACAGGCCCTTAAAGCACTCTCACTGGCCAGGGCAGANCCCATGGCCACCCCAAGCC  
50 CAGGGAGTGTGATCCTTCCGCGTGCCTTGAAGAGAAGCAGAGATATTTGGAAGACGATACTACCAAC  
TAACACATAGCTGTATTTCTCTCTCTACAAAATTTCTTTTGAAGTATTTTTCTTTTAAATTGCGGN  
GAAATTTACCTTCAGTNAATGCAAAGACTTAGTGACACCTTGTAGATNTTTATGTGCACCCTANAA  
CCCATCAACCANATCAAGACACTGAACGCTTTCACACCCTGGTCACTGCCNCGCCTATGCACACCCGC  
AGCCTGCCACAAATAACCACTGGTCTTGACCGTTATCACCAGAAGATATGGTTGGTTTAAAGCTTCA  
55 TGTAACAAAAATCTGGGGACTCTTGCTCAACATTGNATCTGGNGAAGTNATCCATGGTGGGGATCAAT  
TTATTAATANCTCNCCTGTAGGGGTCTGGCATGGNGACTTAAAAACCAACNGGTTTTTGAATCCCTT







GCAGGCTGAGTTTATTTTCAGACCCCTTCCTCANAGGAACAAAGGCCGGAGACACAGGGCTGCCTGTAC  
 TCATTTCTTTTGTATTGNNGCATCCCCACCCCTGCCCCAGCAAACTCACGCATCAAAAAAAAAAAAA  
 AANNGTTTNTNTNTNTNGTNTTNNANTTTTTCNNGGNNCNGGTTNGCNAANTTTTGNAACCCNG  
 GGGGANAAATNACCNAANTTTNGCTTTTGGANGNCCCGGGCCAACTNCCCCNCAANGGGAANGN  
 5 CCAAAAAAGGGTTNNTTTTAAANCTTNTTTTNGACNCCNNGGNAGGNATTTGTNNNCAAANCTT  
 TTTTATATNNNTTTTTTNGAAAAAANTTTTTTNGGGCCCTTTTTTTTACTCCGGGNNGGNNANNCN  
 NNGGNANNAGGNTTTTNAANAACCGGGGGGGGNCCTTCTTTTNTTTTNGAANGNNGGGGGAAAA  
 ANCNNACCCCGNTAAANTNGATTTTTTNGGGCCCTANATTTTCCCGGCGNGGGNNAACCCNTAGTN  
 GGANNGGGGNNGATNCCCGNCCCNATNTTNNNTANCTNNGGGGNNNATAAAAANCNNTNCNGGNGN  
 10 NAAAGGAAAAAAATNTTCCCNNTTACCGGGGGGCCCGGGGNTTTTNTCCTTNNNCAAANGGNTT  
 TTTTNTTNTTNTTTCNCCCCCCCCNTTANAAAAAATNTTNNAAAGTGGNGGGGGGNNGGNGCC  
 CANTCTNCTNTNATAAAAAAANAAAAANCCCTCCCNCCNNGTGCCCCNGGGGAANNTNGTTCTCC  
 CAANCCCTAAAAAANAGG

15 TNCCCNATGAAGNGGNCNCNNNTNACNNANNCGCTNGCTTNAACTNCTTTNANGCCCNCATANNGGA  
 GTNCGCATTACAGTGGTCNGTCCGCNCCTANAACCTGTGCGANNCCCCNNGGNTGCNANCNNTCNGG  
 NTGCTCTNGTCATNGAANANTGNCANGNCCTCTGCGCTNNGNNCACTCNNTNNNATNTTACNTTGGCG  
 GNCTCTTTGTGTCTTACGNTNNTTNTTNGANGNGNTCNCNNTTGAANNTNGNNTCTGGCNTAGGT  
 20 NTNGTNAAGNNTTTTNTNTTCTCTNGNCCANGCNCNCCNCCNAGATATTTNCCCGNNANNTTA  
 TNTAGNNAGGCCCNAAATGTCCNTTCTCTNTTATGGANCTTNTTCCANANGNNTTACNAAATNTT  
 NANNTNTNGNCCNAACNATTCCTTNCNAGATNTTNTCNGGNATTTNTCTTGNNNTCTATCNANNNNTT  
 GTCNCTTNNCTANNANACCNCNCNGNCTCCCTTNTATNCTGGNAGCGCCACANNAANNGTGC  
 ATTTGTTATNTTNCCTNAGGCATTTGGNAATCTTNTCGGNTTTTNTTNNNGTACNNNNGATGGTGN  
 25 TTCTNCNAGNTCTNATNANNNANNANATNGCNNNANCTTGANCTTNTTNTGNTTNGCNAATNTA  
 NAAGNANNCAATTNTNAATTACATNNNCCTAAAGNNGCCCTNCTTNNCAGCNACCNTCATNNNTT  
 ANCCNCNCGGNTCCCCGTCTCGTTTCATTNCTTNTTANNNNTNNCTNNNTAAATAATNGTTTCTTN  
 ATTNCTNCNNGCNNTAAGNANCNCACNTNTCTTNCACCTNNNTTNNCNCNTNCNCGNATTCTNN  
 30 NCNNNNCNNTCNNTNCTCNGTNTATNCCCNCGACAGCAANANCNATTGCATNCTGNNTTCNNCCACG  
 CGCTCTTAACNACTACNNCNCNNNGNNTCTTCTTNTNNTAGCANNTNNCNANAGNNCANNGCNA  
 CCGCTTANTTANTCNGTTAANNCCNNGNTTNGCTGNTCANCNNGNGNGNCCTNTGTATCANCNNTG  
 CGNGCTCCTNNANCANCCCTNGNCANNAATTNCGTGNANNTACTNAATTCANCTCATCTNNACAGTC  
 TCNTCTGNTTGTNTNCANNTATNTTNNANTGGNGACNTGGGCNCCGNTCNTNCCCACTNATNGNNGT  
 35 GTCNNATCTCNTNTTACCTNNNCNNTGTCTNCNTTTGTNCTGCATTNTNAANAACCTCTGNNTCGTTA  
 NCNCNCCNTNCTACTATGCTNTCATCTCTNTGTTTCNNGNNATNATNNCTCTTCTTNTNCG

40 TTTGAGNCCTNAGGGGANGTCGTAATTNCNNTGGAGNACNGCTCTAGAACTANGTGGATCCCCCGG  
 GCTGCAGGNAATGGNGGCACGAGGCAATATTNGTGAGCNTCTACNTTANGACNATGNGTNCNAAGCG  
 GGNNNATNCTTTANTGTGNTCNACTTTTNCAGATNCNATACNCCNNCAGGGCNTNACTNGTNCNGAT  
 TGCTCCTANATNGGNACNTAANCNCGGCNCTACNANACNCTTATTCTNAGNNACNACCNTAGACA  
 CNGTNGNNTNNNTANNNNTANGNNNNACNGACACNCGTGAGGCTCNTGNNNAGTTNACNCCNC  
 45 TNCTCTTANAANNANTTCTTNNCCTGNACAANNNNCAGNAATCNTTNTNGTTNAAANNAGTAGCNC  
 NTCNNATNTTCTNAATCTCTTTCNTCTTGCTNTANGACTNAAAAANCCNNNAGNTTNAANACNCANA  
 CAGNNACNANNNGCTTTTNTANAGANNCANNNTNCGCGACNTGTANGNTNTGNNAATNGNCGANA  
 AATTNCNNGNCGNCANGCACNACTNTTNNNTTTTCANTTCCCGGTNAAATNTTTAACNTTNCNCNC  
 TCACTNACTCNNTCACTTNNCNCNACTCNAGTANNGNCAANCNCCNTCTGNTNCCNNACTTAT  
 50 ATNTTNCANNNANNAACANTNTNCNTCTACANTNTTNNCTAGANNGTNCNCGATNCNAANCATNANTTNNAT  
 TCTNNNGCNNGTNCNANTTNNACCTNTCGNCCNCTAGANNGTNCNCGATNCNAANCATNANTTNNAT  
 CGTGGTANTCNNNNATCNNNCAAATTNNNNNGNTNCCNNTGNCNTCTNNNAGTTCTCNNNTNNATN  
 NNNACNANGTCNANGTNNCNTACTACNNGTNNNANAGTTGANANTCNANANGNNNCANCGTNGNCG  
 TCTCGTANAATGGNCCNNNTAATTCNCTNACTANGTCNNANGCTCTCCGNGTACNGCNATACATGTA  
 CANTTNNNTCNNGNNNAGCGGNCNNTNTNTACTCTCCTNACTANNNNNANGTTANCNCTNANGTA  
 55 CAACNCGTNGACNTTNTTNNANGTATGAAGANNNTGTNTTANNANNNGTGGATNCTCNANGATT  
 ATNCCTANTCAANTAGNTCTNCNCCNANGANCCANAATNNNNACNCANCACGTATGTCANNNCNCN  
 TGTACGANCNAGGNCNNAACCGTNGNNTNTNCACGTNGCTNTCATNCG

TTTGAGNCCTNNAGGGGANGTCGTAATTNCNNTGGAGNACNGCTCTAGAACTANGTGGATCCCCCGG  
 5 GCTGCAGGNAATGGNGGCACGAGGCAATATTNGTGAGCNTCTACNTTANGACNATGNGTNCNAAGCG  
 GGNNAATNCTTTANTGTGNTCNACTTTTNCAGATNCNATACNCCNNCAGGGCNTNACTNGTNCNGAT  
 TGCTCCTANATNGGNACNTAANCNCGGCNCTACNANACNCNCTTATTCTNAGNNACNCACCNTAGACA  
 CNGTNGNNTNNNTANNNNTANGNNNNNACNGACACNCGTGAGGCTCNTGNNNAGTTNACNNCCNC  
 TNCTCTTANAANNANTTCTTNNCCTGNACAANNNNCAGNAATCNTTNTNGTTNAAANNNAGTAGCNN  
 NTCNNATNTTCTNAATCTCTTTTCTTCTGCTNTANGACTNAAAAANCCNNNAGNTTNAANACNCANA  
 10 CAGNNACNANNNGCTTTTNTANAGANNCANNNNTNCGCGACNTGTANGTNTGNNAATNGNCGANA  
 AATTNCNNGNCGNCANGCACNACTNTTNNNTTTTTCANTCCCGGTNAAATNTTTAACNTTTNCNCNC  
 TCACTNACTCNNTCACTTNNCNANCNACTCNAGTANNNGNCAANCNCCNTCTTGNTNCNCNNACTTAT  
 ATNTTCNANNNNANNAACANTNTNCNTCTACANTNTNCTNGTCTGNNATNCATACGCNAGNGNCA  
 TCTNNNGCNGTCNANTATNNACCTNTCGNCCCNCTAGANNGTNCNCGATNCNAANCATNANTTNNAT  
 15 CGTGGTANTCNNNNATCNNNCAAATTNNNNNNNGNTNCCCNCTGNCNTCTNNNAGTTCTCNNNTNNATN  
 NNNACNANGTCNANGTNNCNTTACTACNNGTNNNANAGTTGANANTCNANANGNNNCANCGTNGNCG  
 TCTCGTANAATGGNCNNNNNTAATTCNCNTNACTANGTCNNANGCTCTCCGNGTACNGCNATACATGTA  
 CANTTNNNTCNGNNGNAGCGGNCNNNTNTNTACTCTCCTNACTANNNNNANGTTANCNCTNANGTA  
 CAACNCGNTNGACNTTNNNTNNANGTATGAAGANNNTGTNTTANNANNNGCGTGATNCTCNANGATT  
 20 ATNCCTANTCAANTAGNTCTNCNCNCCANGANCCANAATNNNNACNCANACGATATGTCANNNCNN  
 TGTACGANCNAGGNCNNACCCGTNGNNTNTCNCACGTNGCTNTCATNCG

TNNAGCNCNATCNGGAGCTNCACCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCA  
 25 GGAATTCGGCACGAGGTGACTATTCTCAACCAACCATAAAGATATTGGTACCCTTTATCTACTATTGG  
 GGCTTGGGCGCGGTATAGTAGGAACAGCTNTAAGCCTTCTAATTCGCGCTGAATTAGGCCAACCCGGAN  
 CTCTGCTCGGAGACNACCAATCTACAACGTAGTTGTANCCGCNCACNCATTNGNAATAATCTTNTTC  
 ATAGTAATNCCAATCNTAATGGGAGGATNCGGTANCGACTTGTNCCCTAATAATNGGGGCTCCCGA  
 30 TATAGCATTTCCTCCNAATAAATAATAAGCTTCNGACTCCTCCCTCCNTNATTCTACTACTCCTNGC  
 ATCCTCTATAGTTGAAGCTGGGCGAGGAACAGGCTGAACCGTGTNCCCTCCCTTAGCAGGCAACCTAG  
 CCCATGCGNGGAGCTTCAGTANATCTAACCATTTTCTNTTTACACTTAGNAGGAGTTTCTCANTTTTAG  
 GAGCCATCANTCTTCTTTACAACANTTATCAACATAAGGCCCCCCCGGAGGGNCAACAATACCAAACCC  
 TTTGTTTCGTAAGANCCGGAAANAATTACCGGGCGGANTANAANTACTTTTCGCTCCCGTGGAATNAGC  
 35 AGNCCGGGCATCCACAAGTGNTTTTTAACAAGCCCGGGAACCCTAAAANACCACCTTTTTTCCACCC  
 CGGGGNNGGANGGAGGAAANCCCTTNTTTTTATATCAACCCNTTNTTNTTGAATTNTTTTGGGNCCC  
 CCCCAGGAAGGNNTTTTTTTTTTAAATCCCNCCCNGGGGGGNNNGNAAAAAATTTTTTTTATTTTGGG  
 GNCCCTCCCTTCTGCGGGGAAAAAACCCTTTCCGATTTTTTGGGGAAANAGGGNNGGGG  
 CCTAAAAGGGCAAAACCGGGTTTTNT

TTNANCNCNATCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 40 GAATTCGNNACGAGGCTNANCNATACCGTNGACNTCNGGGGGGGCCCGGNACCCAANTNNNCCTAT  
 AGTGNNNCNTATTNCANGNCCNGNNNACNNNGCTTNNNCNCCAGGGTNTGTCTNCCANTTGGNNCN  
 AGANNACNTGNGCATTGACAGCTCAGGACTNNACNGGTNNGAAGGTNACATNNGNATNATTNACCTT  
 45 TAAAATNANTCNTGCNCTCATGGCTNTGTTTNTTGGCTNTTGCCCCATNTGATGANCACNTTANGT  
 GNNTNACCTTGNACCTGATCANTGCTNCCCNCTNNNAATGCNTTGCTTCNTNACANNTGACAGNACT  
 TACAACATTTNTAATGGNTCNACCCGNNTNANTNANAAAAGAACTNGTGNTAACCATTTTANAAAT  
 CCANGTCAACNNCTATNTNAGNGATNNATGTGTATNNGGAAANGATCNNTACATTATCAANTGATN  
 AGAAGCCCTGTNTNCAATGNACATNTACNTNATNTTTAATATGNNGTACNATAAAATTTTAACAT  
 50 TTGGCGGACNTTGAAGTGTGTTAATGATTTGCGGGGGGNNNNNGCACNCCTTTTGGNNGGGNNGN  
 NCGGGGGCCNAANTNGNCNTTTTNGGGGGNCCNTNAAANANNNNNNNNNNNNNNNNNNNGGNGGNN  
 NCNCCNNAANNNAANTNNCCAAANTNNGGGGNAANNCCCTNCCCNNTTTTGGNNNNNNNNNNNN  
 NNCNNNNNNNTNTNTTNTNN  
 NNANNN  
 55 NNNNNNGNNNNNNNNNNNNNTNNNTTNNNNNNNC

TTNNNCNCTATCTGGAGCTNCACCNCNGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAG  
 GAATTCGGCACGAGGCGCNCNNNAATNCNTNTNTAGNTGTNTGGANNACANGCCCGNCCTNNATATC  
 NGTTCACCANACTGTGANTCATNAACACNAAGCTTTCTNCCTAGGTTTTNTAATGGCNATTTTCAATTA  
 5 GANNAGNCTGTGGNTTGAAGTGCANGACTACAGAGGTTGNGAAAATCACAGTNACNTNANCCCCCNA  
 GAAGNGCATCCCCCTCTCNTGNCTCAAGTCTGNCTNGGCTGTTGCCCCNATCGTTGAACACTTTTAAAG  
 GTTCTGNCCCTGCNCCTGGNTCACTGNTACCCCTCNCTTAAATNATTAACCCTCCTGAGAGCTCACAGN  
 TACTCGTTGATATNTATACCTGGNTTNACCAAATTGAATGAAAANGGANCTTGTGCAAANAATTTAAN  
 AAACCGNTNTCACNACGTNTTGTAAAGAGATCNCTGTAAATNGGGGAAANGTCCTTTACTTTTATCAATTAT  
 10 GTAAGGCTTTTCTATATCGAATGGNCCTTNTNANCANATCATTTCATATGGNGANCANAAAATTTTAAAA  
 TTAANGGACTTGAAGTNTTTGTNAANGATTTCCANNNAAAAAAAAAAAAAAANCNTTGGGGGGGGGGN  
 GGCCGGNNCCCCCATTNCCCCNNTNTTNGGGGGGNGCNCNNNAANNANNNNNNNNAGGGGGGGGGGGG  
 GGGNTTTTNTTNCNNCCNNAAAAANGCNTTTNNCCCCCCCCCNCCCCNNNNNCNNTTTTTTNAAAAANCN  
 NNNANNANNCCTTTTTTTNNNTNCNNTTNGGAAAATCCCCGNNNNNNNNANNNNTTTTNNNNNTNGGG  
 15 GAAANTCNNNNNGGGGGGNAAAAANNNNGNTCTTTTNNCNCGTNTNNNANNNNNGGGGGGGGGCCCCC  
 NNNNAAANNNNNGGGGGGGGGGNNCCCCTTCCTGNNCCNTC

ANCAANAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGA  
 20 ATTCGGCACGAGGGGTGGCTGGAGATGGTAGTGGAGAGGGGAGTGTGGGTTTTGGAGTCGAGCAGAC  
 AAGTATAAACCTCATCCTCTTGTACTCGTAGCTGCTTCCTGTTGTTGTAAGATTAATGACATCATG  
 TGAAGCACCAGCACACCATCATCATAACAACAATATCTAACTTTATTTAGCCCTATAGTGAGTCGTATT  
 ACANNNNNNNNNNNNNNNNNNNNTNNNNNNNTNNNAANNNNNNCNNNNNGNTGGNNNGTNNNNNCNNT  
 NCNNNNNNNNNGNNNANNNNNNNNNCNTGNNNNNATNTNTNANCNNNNNNNNNNNNNNNNNNNNNN  
 25 NNNNNNNNNNNNNNNNNNNNCNNNNNANNCNNNANNNNNNNNNNNNNNNNNNNNTNNNNNTNNNNNNNNNN  
 NNNNTNNNNNNNNNNNNNNNNNNNTNTNTNNNNNNNNNTNNNNNNNNNNNNNNNNNNNNNNNNNN  
 NNTNNNNNNNNNNNNNNNNNN  
 NNCNNNNNNNNNNNNNCN  
 NNTNNNNNNNNNNNNNN  
 30 NNN  
 NNNNNNNNNNNNNNNNNNNNTNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNANNNN  
 NNN  
 NNNNNNNNNNNNNNNNNNNNTC

AAAGCTGGAGCTCCACCGCGGTGGCGGCCGCTCTAGAACTAGTGGATCCCCCGGGCTGCAGGAATTCG  
 35 GCACGAGGCTTGAAGATCAGCCGCCATCATGAACGACACAGTAACTATCCGGACTAGGAAGTTCATG  
 ACCAACCGACTGCTTCAGCGGAAACAAATGGTCATCGATGTTCTTCACCCTGGAAAGGCAACAGTACC  
 TAAACAGAAATTCGGGAAAAACTGGCCAAAATGTACAAGACCACACCAGATGTCATCTTTGTATTTG  
 40 GGTTTCAGAACGCATTTTGGTGGTGGCAAGACAAGTGGCTTTGGCATGATTTACGATTCCTTGGATTACG  
 CGAAGAAGAATGAGCCCAAACACAGGCTTGCAGAGCATGGCCTATATGAGAAGAAAAAGACCTCACG  
 AAAACAGCGGAAGGAACGCAAGAACAGAAATGAAGAAAGTCAGGGGGACTGCAAAGGCCAACGTTGG  
 TGCTGGCAAAAAGTGAGCTGGAGATTGGACAACAGAAGGAGTAAAGATTCTGCAGTGACTGTATCTG  
 TGGTGATTGTGCAGATTTTTCATGAAAGAGAGAATAAACTAAGACCTTTTACAAAAA  
 45 AAACCTNGNGGGGGGGCCNGTCCCNATTTCCCCTTATAGNGAGNTCGNNNTNANNNNNNNNNNNNN  
 NNNNTNNNNNNNNNNNNNNNNNNNTNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  
 NNNNNNNNNNNNNNNNNNNNNNNNNNTNTNNNNNNNNNNNNNNNNNNNCNNNNNNNNNNNNNNNNNT  
 NNNNNNNNNNNNNNNNNNNNNNNNNNTNNNNNNNNNNNNNNNNNNNNNNNTNNNNNNNNNNNNNN  
 NNNNCCNNNNNNNNNNNNNCNCNTNTNNNNNTNNNNNNNTNNNNNNNCNNNNNNNNNNNNCNCN  
 50 NNNNNNNNNNNNNNNNNNNNNNNNNNTTNNNNNNCNGNNCNCNNCN

GCNCGNNNTCCNNNNNTACTTTTTATNTANTATTATTATTTNTTCTACANTTNNTACNNCTNNATNTTCA  
 55 ANTTNANNTCTACNTNTNTTCTTCNGTTGGCGTNCGGTTATNTGGCCTTCNCCTTTGANNCCCTATATG  
 GAGTCGTATTACAGTGGCGGACNNTNTATCAACTAGGGGGGATCCCTCCNGGCTTTACNATTTCTNT  
 NTATNNANNTCNNTTACCACCCATAANCCCNNGNCNNNNNTANNANCTTTCNGGCTNTTGANTCACC

TTTAATTTTCATTCCCCNTNAANACTANTTAACCTAAGNCCTNNCGCNTTCNCGNGNCTTAANTNCTTNT  
 TTTTCNTCCCTTCCTNCTNCCNANTNTGACACTNTNNNTNGNCCAGNCNTNTCANTNNTANTTCTNT  
 TATNCACACNCGCNNNNCTNTTGCNNGTNTNANTCTATNTNAGNACNNTCACNNNTNCNTCTNTCTGT  
 CATTTCCTNCNNNATNNTACTNTTNTATNNCACTNCACATCTGTATCNCNNTCTNCNNTTATTTNCC  
 5 AGACGNTACNATTNNCTCNANTATTTTTGNGCTCCNTNNNTNATNGATCNTATNTTNTTANNTGNCTGA  
 CNCCCTNAGACNGTNNATATNACTTNATTNTNTNNNTTNNCTNNCANTCANNNNNGATACTCGTAT  
 CNCATTGTNNACNNNTNCTNNNACTGTANNCATTTNNCTANTTNGNTTANANNANATNNCTNTNCC  
 AGATGACCNTTTATTTTCNATTCTCTCNCATTTCCAGNNTCCNNANATCATTATTAGNCNACTANNAN  
 TCNTCCATANNAATNCTNTTATTTTACTTGACTCTCTTANANCNGATANTTNCNTNCTANTNTCTTTT  
 10 ANACCACTCCTNTGNCNCNATNANCTCTTTNAACTACTNCCCGTCGTCTTCNACNTGNCNTCTNCCNTN  
 GNCCNTATTTNATTTTGCNNTNANCCNNNTCCTNACTTCNNGTCATACNACTNGACTCGNATCTACCN  
 NTTCTATGACTCNNNANNAGGNTATCNTATGTNTNTNTGATNCTTCGTAATTNNTCGGNTNNCT  
 NCTNNTNCGTTTTNTTTTGTANTGNNNTTTCNTTCTNCNACGTACGTCCATCNNTNCNGTNNCTTN  
 NTNGNNNCNATGTNTNNCTNNNGACNNACNAANTACTCNCGTGTCNTNACNATCGATCTCTCTCACA  
 15 TATNCTTACNATCGANAANTTATANTCNTCTTGTTAGTCANNTATCATNTCTNNNCNNNANNTNNA  
 TTNCNCTCTTAGCTNTNNACTAAGCGNGANNNCNTANATANGNTNTATCTCATNAACNCCTANCGTAT  
 ATNGCTCTCTCCGTNACTCCAACCTNTCTAATNCGCGCTNNCTCCNCGACANACTTATGCTCTATCCA  
 TTCCTCACANTAANCATNTGTATCNTATCNANGGNTGCNACGACNANANANNATTGNTGTNNNTNNTC  
 ATCNACGCACGCTCTNCTNCCACGNTNGTTNACGNTCTNNATCAANCTCNCCTANCTNTNTTCCNNTC  
 20 TCTACTTATGNGATCCTNCNCGATTTANCCNCCCGTGTGTATGCNAGNCTCTTNGTGATANATAACGN  
 NCCCTCTNATCCNCTATNCGATNTCCG

CTCGACNGNNGCGGGTNGGCCNGGTGANCNGCTCNTGACNCCCTNTNCAGCCCTCATAGTGGAGTN  
 CGTATTACATNNNAGGNCGATCCCTCNGGCTGCGTNTCCNCANGCCCNNTTCCCTNNGGNGTGC  
 25 NNTNNTATNTNTTTCNCTNTCNNNTCTNCACTTCTCANNNCGCCTTGNCNNNTTGGNGNNCAT  
 NCANATNTTTTNCGCTNTCGTNCNANGCTCGCNCNGTATNGGNCGTAGNGNNNCCGGGNGNGGC  
 CGNTCCANCNCCCGCTTATNNCNTNGGANNCCACCCNCCGTCNCCNCTATATCCNCCNCCNGTN  
 CTTTTGTNCCGNCNCCGNGGNCNGTGTNNCTCTNNTNTNCCNCCNCTGCGNTNNCTNCTNTTCC  
 30 NTTTTTTTTNCTNNNTNTNCAACGCATGNTNNCGTCCGNCNGTCCCTCTNNNNNGNNCTTNTN  
 NTNCTNTCNTNTTTTTCTACGTANTTGGTCGAGGNCNNNNNCCACTCCNTGCTGTTNCCNTGGNGN  
 NGANGNGCCNGGCTTCTNTCCTGTNTTNTCNCCTNCGTCTGANCCNNGNTTNNCNTCNCCT  
 GTNNGTTAGNGCCGCGCNGCGNTGTANNTNCAACNCTTCTTATNTGCGNGGCNNCTCGATN  
 NATNNCTTTCANNNTCTNATCCCCACAANCNNNTGNTNTCNCNACNNCTCTNTCCNTATCCNCTC  
 35 ACTNCTCNAATGGGGNNNTTTCCTNTTNCNNNTNTNTATCTTCTANTCTTCCCTATNTCCCGTNN  
 NNCCTCCNCCNATNTNCCGCGCATNGNTCNCCTCGTGNTTACATCNNNCCNTCTGGTTGCTCCNTCN  
 GANGATNCNTTAAACNCTTNTNCGTGTGTCGNCNNCTNCTTNCNATNTNTACNGCCGNTGNNCGNN  
 ATTNACTGNGNTCCCGCNGGNCNATTNTNCTTTCATCCTTNNNATTTCTTANTNCTNTACNNNCGT  
 GGTCGTNGTAATCAGCTANCCCTCAANGTGNCCTCTNTCTCNNNTNNNTNCGNCTGTCTNGGCNNCT  
 40 CATATGNNNTNTNTNTNCCNNTCGANTNCTNCACNTTCGTNCTNTGCTTCCGCGNGTNCNGAGCGACN  
 TTCGTTGNTCNGTNCNCCNCTCNGTTCNNTCCTGANGNGGTGNCNCCNNTGTNTNCTTNTTCTCT  
 NCGTATNTTCTCNTTCGNCACNNCTCGNNGNCGNAGCGANAGNACTGNNCGTNANANCTAGTCNNC  
 TGNGCAACTGANGNACNGCGTATAGTCNTATGCCCCGCGNTNNGNGNACATCTNTCTGNNCNTTNNCN  
 NATNTGNNNNNGCTNNNANGTNTNACATCTCGCTCGANNTNTCACTNCGACGCGCGGTGCTCGCTCC  
 45 GACNATNTTCTGTNTNNAANGGNTNNNTCNANCTNNNCACG

GCCTATNNGGAGCTGCACCNCNGTGGCGGCCCGCTCTAGAACTAGTGGATCCCCCGGGCTGNAGGAAT  
 TCGGCACGAGGCAGAGTTGTGGAGTTACAGAAAAAGTNGTCCAGCCACAAAAACATAANGTGGTTN  
 50 ACTATGTGNACCCTTNAAAAAGGGTCANTGGNCCNNGNCTTNAANGGGCCNANTNTGGGGNTGAN  
 CNNCCNANCNGANNTNANCNAAGGGGGGGTGGTNATTTAAGGAAATGAAAAAGNANGACNAGNC  
 ACTTACNGGCCCTTTAANCNCTNTNACTGGNCNNGGCNNANNCATGGNCACCCCAAGCCCANGGAG  
 TGTGANCCCTTNCGCGTGCCTTGGAAGAGAANCNAGATAATTTGGAAGACGATACTACCCCTAACACAT  
 ATGCTGTGTTTTCTCTCTACANAATTTTTTTGAAAAGATTTTTTCTTTTAAATTGCGGGNGAAAATTA  
 55 CCTTCAGTAAAATGCGNAGACNTAAGTGCNACCNCTGTNNATTTTATGTGCNCCCTATACCCNTCNCC  
 CAATCAAGACACTGGACGCTTTCACACCCTGGTGACTGTNCCGCTATGCACACNCGCAGCCTGGNACA









United States Patent & Trademark Office  
Office of Initial Patent Examination

Application papers not suitable for publication

SN 09876143 Mail Date 06/06/01

- ☐ Non-English Specification
- ☐ Specification contains drawing(s) on page(s) \_\_\_\_\_ or table(s) \_\_\_\_\_
- ☐ Landscape orientation of text    ☐ Specification    ☐ Claims    ☐ Abstract
- ☐ Handwritten    ☐ Specification    ☐ Claims    ☐ Abstract
- ☐ More than one column    ☐ Specification    ☐ Claims    ☐ Abstract
- ☐ Improper line spacing    ☐ Specification    ☐ Claims    ☐ Abstract
- ☒ Claims not on separate page(s)
- ☐ Abstract not on separate page(s)
- ☐ Improper paper size -- Must be either A4 (21 cm x 29.7 cm) or 8-1/2"x 11"
- ☐ Specification page(s) \_\_\_\_\_    ☐ Abstract
- ☐ Drawing page(s) \_\_\_\_\_    ☐ Claim(s)
- ☐ Improper margins
- ☐ Specification page(s) \_\_\_\_\_    ☐ Abstract
- ☐ Drawing page(s) \_\_\_\_\_    ☐ Claim(s)
- ☐ Not reproducible    Section
- Reason    ☐ Specification page(s) \_\_\_\_\_
- ☐ Paper too thin    ☐ Drawing page(s) \_\_\_\_\_
- ☐ Glossy pages    ☐ Abstract
- ☐ Non-white background    ☐ Claim(s)
- ☐ Drawing objection(s)
- ☐ Missing lead lines, drawing(s) \_\_\_\_\_
- ☐ Line quality is too light, drawing(s) \_\_\_\_\_
- ☐ More than 1 drawing and not numbered correctly
- ☐ Non-English text, drawing(s) \_\_\_\_\_
- ☐ Excessive text, drawing(s) \_\_\_\_\_
- ☐ Photographs capable of illustration, drawing(s) \_\_\_\_\_

09876143-00001